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LIKING RELATIONSHIPS AND ATTITUDE BALANCE AMONG UPPER ELEMENTARY SCHOOL CHILDREN

by
Denis Joseph Carville

A dissertation submitted in partial fulfillment
of the requirements for the degree of
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Doctoral Committee:

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ABSTRACT

LIKING RELATIONSHIPS AND ATTITUDE BALANCE
AMONG UPPER ELEMENTARY SCHOOL CHILDREN

by

Denis Joseph Carville

Chairman: Theodore M. Newcomb

This study tests the applicability of T. M. Newcomb's balance theory to the school-related attitudes and classroom liking relationships of some 560 upper elementary school children.

Balance theory states that the attraction of a person, A, to another person, B, interacts with A's attitudes toward important objects (X), which are relevant to his relationship with B, in such a way as to constitute a dynamic attitudinal system. This study is limited to analysis of collective ABX systems in which the balance between A's attraction to B and the degree of objective agreement between the self-reported attitudes of A and B is examined. If A likes B, the collective system is in a state of balance when A and B actually agree regarding objects which satisfy the criteria of importance and mutual relevance. If A likes B but disagrees with B about such objects, the collective system is unbalanced. Balance theory states that imbalance is uncomfortable, and that people will seek to maintain or restore ABX systems to a state of balance. In collective systems balance can be restored for A if: 1) A changes his attitude toward X so as to agree with B, 2) B changes his attitude

toward X so as to agree with A, and 3) A decreases or reverses his positive attraction toward B.

The subjects were some 560 children in nineteen fourth, fifth and sixth grades from twelve schools in the greater Detroit area in 1965-1966. Nearly all Ss were from white middle or lower-middle class homes.

The data used were derived from sociometric and attitude questionnaires given in early fall and late spring. All AB pairs were pairs in which A named B as his or her most-liked classmate. Degree of reciprocal liking of B for A was controlled; B could name A as his first, second, third, or fourth most liked classmate, or not list A among these four at all.

The principal measure of agreement was the average discrepancy between A's and B's ratings of all class members on a nine point scale (from complete liking to complete dislike). Agreement on school attitudes was measured by the proportion of agreements between pair members on seven school-attitude items.

Liking status consisted of students' rank order positions in a distribution of the sums of children's weighted received-liking nominations (four points for being chosen first most liked, etc.).

Eight major hypotheses were tested. These predicted:

1- more agreement between Ss with high than between Ss with no mutual liking,

2- greater persistence in mutual liking among pairs with high than among pairs with low agreement,

3- more agreement in spring among pairs with high than among pairs with low mutual liking in fall,

4- a positive relationship between degree of reciprocated liking by B for A and degree of intra-pair agreement,

5-& 6- more frequent proximity on rank orders of teacher-rated utilization of intelligence and peer-perceived cooperativeness with the teacher between pair members with high than between pair members with no mutual liking.

Reasoning that highly liked Ss would have a higher criterion level for agreement, we also predicted:

7- greater agreement with most-liked classmates among children with high than with low liking status,

8- more frequent reduction of liking for most-liked classmates among high status children than among low status children, given initial low agreement.

Seven of these hypotheses were supported at a confidence level of .05 or better. Hypothesis 4 was not supported. Hypotheses 2 and 3 were supported only among boys, the latter only with boys as X objects. No hypothesis was confirmed when school-related issues constituted the X variable.

Lack of confirmation for balance regarding school-related attitudes was not unexpected, and could be taken as confirming the necessity of the criteria of importance and relevance. Despite support for seven of the hypotheses when

attraction to classmates was examined, the strength of the relationships obtained was not great enough to warrant belief that the dynamics of balance between upper elementary children and their most-liked classmates play a major part in the formation of children's attitudes toward classmates and classroom life.

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I am glad to have the opportunity to express in this document my indebtedness to my wife, Patricia Carville, for the many hours of work she has put in helping me reduce data to interpretable form and typing, as well as for the support she has provided so continously in many other ways.

I am also very grateful to Dr. Newcomb, as much for the model and manner of his interactions with others and myself, as for his always helpful suggestions and feedback regarding the dissertation. I cannot but wish that his matter of fact warmth and wisdom could be conveyed as fully through the written as through the spoken word.

It was as a member of Dr. Lippitt's research program in socialization and education that I collected the data on which this dissertation is based and developed the greater share of my guiding interests in psychology and education. Dr. Morse, as chairman of the doctoral program in education and psychology, has done everything I could have hoped for in order to expedite the successful completion of work toward the Ph. D. And Drs. Kelly and Johnson have provided both encouragement and valuable suggestions.

Finally, I should like to thank Dr. Richard Schmuck, now at the University of Oregon, for his interest and help during the year in which the data herein analyzed were collected on the project of which he was director.

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CHAPTER I

THE PROBLEM: BALANCE THEORY AND CLASSROOM RESEARCH

In this study an attempt has been made to test the applicability of balance theory to the attitudes and liking relationships of some 560 upper elementary school children.

The factors and dynamics with which balance theory concerns itself are illustrated in a basic principle of the theory: the more person A likes or is attracted to person B, the stronger will be A's inclination to perceive himself and B as being in agreement, at least with regard to those objects which are important to A and which have some relevance to his relationship with B. Conversely, if A likes B but perceives himself to be in disagreement with B regarding X, it is asserted that A will experience discomfort over this and will seek to change his feelings or perceptions so as to restore to a state of "balance" or comfort the relationship between a) his attitude toward B, b) his attitude toward X, and c) his perception of B's attitude toward X.

Newcomb's formulation of the dynamics of balance has seemed to provide the most relevant conceptual framework within which to interpret the relationships between the

attitudes and liking choices of children in the classroom (Newcomb, 1953, 1956, 1961). The reasons for this are that, particularly in the 1961 publication, Newcomb deals at length with the conditions, operation, and effects of balance in the context of friendship relations; in addition, this source deals with data on real friendships over an extended period of time as derived from sociometric and attitudinal questionnaires, rather than with phenomena observed only in a laboratory setting. And finally, Newcomb theorizes about and reports on actual agreement as well as perceived agreement between friends.

Newcomb grounds his theoretical discussion in what he calls systems of orientation. In general terms, a system is any set of entities so related to one another that changes in certain states of any one of them induce specifiable kinds of changes in one or more of the others. A system of orientation exists for an individual, A, if:

1- A has an attitude, positive or negative, toward some object, X, that A views as having a common relevance of some sort to himself and another person, B,

2- A attributes an attitude, positive or negative, to another person, B, regarding the same object, X,

3- A has some degree of attraction, positive or negative, toward B.

The above is termed an individual system of orientation. In this study, we shall be concerned with collective systems involving two persons.

> The usual precondition for the existence of a collective system is communication between A and B

> concerning X . . . communication need not be verbal; it need only be such as to result in the assumptions by both A and B that (1) some degree of attraction, positive or negative, exists on the part of each toward the other, and (2) each of them has an attitude, positive or negative, toward the same X. Under certain conditions (especially close acquaintance), a person may correctly assume, without communication, that both of these conditions have been met by one or more other persons; in this case a collective system has been activated regardless of the absence of communication (Newcomb, 1961, p. 11).

In this study we shall be concerned only with the actual orientations of system members, i.e., with the degree of actual similarity or difference between A's and B's attitudes to the same object, and the degree of their mutual attraction to each other.

The key factor in system stability is the strain experienced by one or both parties to return the system to a state of balance when it has become unbalanced.

Figure 1
States of Balance and Imbalance

A + B	A + B	A + B	A + B	- A - B
+ -	- +	+ +	- -	- +
X	X	X	X	X
i	ii	iii	iv	v

Number i and ii above are examples of unbalanced systems. A will feel some strain if he likes B but they disagree about X. Generally, when A likes B the ABX system is balanced for A when A and B agree or are perceived as agreeing about X; and the system is unbalanced when A and B disgree or are perceived as disagreeing about X. In cases where A dislikes B the ABX system is generally considered to be in a state of balance

when A and B disagree or are perceived as disagreeing about X. Agreement between A and B in this instance is usually postulated as constituting a state of imbalance for A.

Balance theory postulates that this strain to change a system from imbalance toward balance will vary in strength with the degree of A's liking for B, with the importance of X to A, and with the degree to which X is relevant to the AB relationahsip.

There are a number of ways A can restore his individual system of orientation toward B and toward X to a state of balance. Let us start with the condition portrayed in Figure 1, i above. This represents an unbalanced state for A. To return his ABX system to a balanced state, A can: (1) change his attitude to X so that he agrees with B, (2) change his perception of what B's attitude really is (3) decide X is less important than he thought, (4) decide X has less common relevance to his relationship with B than he thought, or (5) diminish his esteem for B.

Balance theory goes on to specify what conditions in each of the ABX elements as well as in the communication situation and the social environment contribute to the likelihood of certain balance-restoring attempts. The foregoing should suffice, however, as an introduction to this study.

Feather (1967) quotes a number of writers' views about the underlying determinants of the tendency to prefer consistency. Brown, I believe, says it accurately and succinctly; "Inconsistency in the mind threatens to paralyze action" (1965, p. 606).

Balance thoery and related formulations regarding congruity and dissonance have stimulated considerable reasearch. Burdick and Burnes (1958), Kogan and Tagiuri (1958), Byrne (1961a, 1961b, 1962), Newcomb (1961, 1963), Price, Harburg, and McLeod (1965) and others have contributed to the research confirmation for balance theory.

Brown (1965) gives an overview of the balance-congruity-dissonance models and a brief comparative critique of each. He does not, however, deal with Newcomb's formulation of balance but with that presented in Abelson and Rosenberg (1960). As one would expect, particular strengths and weaknesses attach to each of the different formulations.

On the whole the set of balance-related theories has achieved a position among those conceptual structures in psychology which are considered to have demonstrated their worth by the research they have generated, and by the successful prediction and the increased understanding of certain forms of behavior which they make possible.

The idea of applying balance theory to the liking relations of upper elementary children found its origin among the implications of Schmuck's findings concerning the effects on children of classroom social structure (Schmuck, 1962a). Schmuck found significant statistical relationships between the centrality or diffuseness of the liking structure of classroom groups and children's overall liking for the group, their utilization of academic ability (as rated by the teacher), and their school adjustment. Given a significant relationship

between a variable as comparatively subtle and remote as centrality of liking in the group and certain behaviors of children it seemed likely that an influence as salient for a child as his best friend ought to have considerable effect on his attitudes and perhaps even his performance. Particularly since there were a number of respectable theories around which said so.

There is, of course, a vast research literature on attitudes of school children and the structure of their actual and perceived social relations in the classroom. Social Structure and Socialization in the Elementary School Classroom (Glidewell, et al., 1965) provides an excellent review and summary of the research (also found in shortened form in Glidewell, et al., (1966)). And Campbell (1966) summarizes the findingsconcerning peer relations in childhood.

However, it seems that classroom research has suffered from the same shortcoming McGrath and Altman (1966) find in small group research generally, a paucity of theoretical concepts by means of which to integrate and render meaningful the information overload encountered in numberless empirical studies. At any rate, not much of the classroom research has been done with reference to a theory as widely known and heavily researched as balance theory, and none of it that I have been able to find has been done using balance theory itself. In short, then, there has been much research on children in the classroom environment and much research on balance theory, but there has been little or none applying balance theory to children in

the classroom. Hence this attempt.

There has been some research applying balance theory to children outside the school environment, typically in summer camps. And there has been research on the stability of individual liking choices within the classroom, a factor of significance for research which would apply balance theory to the classroom.

Regarding stability of individual liking choices over time, Criswell in 1939 studied 216 children in grades one throught eight, seventy-five percent of whom were Negro. Children were asked which two classmates they'd like to sit with and why. The question was repeated after six weeks. Criswell reported little change in the number of mutual choices or in the number of isolates. Changes were in the area of unreciprocated liking choices. Fifty-one percent of the unreciprocated second choices were changed compared with twenty percent of the reciprocated first choices (Glidewell, et al, 1965).

In 1948 Austin and Thompson asked 404 sixth graders in seven schools in a city in New York State to name their first, second, and third best friends and to tell why they chose these friends. Two weeks later the students answered these questions again. Forty percent of the Ss reported no changes, fifty-five percent reported changing one or two of their choices, and five percent reported changing all three choices. A third of the changes were attributed to lack of contact, quarreling and incompatibility. Another third were attributed to undesirable

personality characteristics in the friend (Glidewell, 1965).

Dubin and Dubin (1965) in a review of children's social perceptions report a study by Seagoe of 823 Ss in grades 3 to 8. Only 29 of 115 original pairs of mutually reciprocating students chose each other again after one month's time.

The impression gained from a review of these results is that individual liking choices in the grade levels under study are not remarkable for their stability.

Regarding the operation of balancing forces among children, Davitz in 1955 studied children living in groups of four to six in a summer camp (Glidewell, 1965). He found that those who liked each other saw themselves as similar whether they were or not, and that there was no difference between a child's most- and least-liked peer in actual similarity to the child.

Shapiro (1966) studied the dissolution of friendship ties among 232 boys and girls between the ages of eight and fifteen during four weeks of summer camp. The Ss lived in cabins of five to ten. He reports that friends who were highly discrepant in their orientations toward camp-related matters, regardless of their importance, experienced dissolution more frequently. And this effect was stronger when the friends were assigned to the same team. Friends who expressed high attraction for each other persisted in their friendships, especially when they were assigned to different teams. Generally dissolution was more frequent among girls and among pre-adolescents.

Nelson (1963) in his dissertation studied two-person collective systems of orientation among boys occupying twelve

cabins during eight weeks of summer camp. Nelson asked questions very similar to some of those asked by Newcomb in his study of the acquaintance process among college men. He found that the degree of agreement in attitudes of importance and common relevance to members of a pair increased with acquaintance and degree of positive attraction.

He found a significant relationship for previously unfamiliar pairs between attitudes to camp and attraction at the end of the eight weeks but not at the beginning. The prediction of later attraction between Ss on the basis of high correlations of early ratings of preferred activites was not confirmed. Attraction ratings between previously familiar pairs were not significantly related to the degree of correlation between their rank-ordered preferences of activities either early or late. Nelson suggested that this might have been because of the lesser degree of common relevance of camp activities for these pairs. Perceived similarity in rating of preferred activities was greater for best than for least liked peers. And perceived similarity with previously unknown best-liked peers was greater than that with previously known best-liked peers early but not later in the eight weeks. Nelson suggested that this might have been caused by the lesser common relevance of camp-related attitudes to friendship late in the eight week period.

A number of the studies cited in Glidewell et al. (1965) advert to apparent tendencies among children to choose as friends those who are relatively more like themselves on dimensions such as race, socio-economic status, and (for bright Ss) intelligence. But these studies do not approach such

relationships in the context of any theoretical framework.

That children do strive to maintain balance in ABX systems seems to be attested to by the few studies of balance among children just cited, and at least suggested by a good deal of research on the characteristics of peer relations in childhood (Dalke, 1953; Davitz, 1955; Kipnis, 1961; Zweier, 1964; Dubin and Dubin, 1965).

CHAPTER 2

INSTRUMENTS AND VARIABLES

Specifically, what I shall be concerned with in this study are a number of hypotheses which directly test some of the basic principles of balance theory on this population, together with a few hypotheses which test the interaction between balance theory and one of the key variables in the literature on classroom sociometry, namely, liking status.*

Since the analysis required for this sort of inquiry provides a ready opportunity to report on some perennial issues in classroom research, I shall also report on some of those issues as constituting relevant information about the nature of the sample used or as worth reporting in themselves.

The hypotheses to be tested will be set forth in Chapter Three. Chapter Two describes the population, the nature of the data, and some of its parameters.

SUBJECT POPULATION

The subjects were students in upper elementary classes

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*A child's liking status is typically a measure of his popularity relative to other children in the class. This information might be derived from counting the number of times his classmates put down this child's name in response to the question, "Whom do you like best in your class?"

at a number of Schools in Wayne County, Michigan during the 1965-1966 school year.

TABLE 1

The Number of Classes, Schools, Boys, and Girls per Grade Level

Grade Level	Number of Classes	Number of Schools	Number of Boys*	Number of Girls*	Total Number of Students*
4	6	5	91	99	191
5	7	6	104	92	198
6	6	4	84	89	173
Totals:	19	12**	279	280	562

* Present in the spring.
** Several schools contained classes at more than one grade level; hence, a total of 12 different schools is represented.

The data were collected as part of U.S. Office of Education Cooperative Research Project No. 2643, directed by Dr. Richard A. Schmuck of the Center for Research on the Utilization of Scientific Knowledge, Institute for Social Research, The University of Michigan.

A total of thirty-five teachers and classrooms were initially involved in the project. Ten classes were omitted from this study because they were team-taught, with frequent shifts of student membership from one class to another. Four others were dropped because of a change in teachers during the school year, and two fourth grades were deleted because of serious lacunae in their data. This left a total of nineteen classes suitable for analysis.

TABLE 2

AVERAGE NUMBERS OF BOYS AND GIRLS PER CLASS IN FALL AND SPRING BY GRADE LEVEL

Grade Level	Number of Classes	Fall			
		Boys Average	Total	Girls Average	Total
4	6	15.33	92	16.5	98
5	7	14.57	102	13.57	96
6	6	14.33	86	15.16	90
All Classes	19	14.73	280	15.00	284
		Spring			
4	6	15.33	91	16.5	99
5	7	14.86	104	13.14	92
6	6	14.16	84	14.66	89
All Classes	19	14.68	279	14.74	280

INSTRUMENTS

Six questionnaires were administered by project staff within two to five weeks after school opened in all classes. These instruments constitute the Appendix at the end of this report. Two of the six questionnaires were sociometric in nature (Questionnaires I and VI in the Appendix); two more concerned the students' attitudes toward and perceptions of classroom life (Questionnaires IV and V); one questionnaire sought information on the children's socio-economic and family background, (Questionnaire III); and one was a sixty-item sentence completion form (Questionnaire II).

Five of these questionnaires were administered again during approximately a four-week period in late April and May of 1966. Questionnaire III was not repeated. Questionnaire I was also given in late January and early February.

The sentence completion data were not available for analysis, and use has not been made of the family background data in this study. The writer was in every classroom during school hours, in most cases for some length of time and on at least two occasions. There appeared to be no reason to suspect marked differences in background among the students such as would constitute different populations for the purpose of this analysis. Moreover, the problems of this study do not include socio-economic variables. The socio-economic status of a majority of the Ss would be characterized as middle to lower-middle class.

LIKING CHOICES AND FRIENDSHIP PAIRS

The source of the data on liking relationships from which AB pairs were derived was the first question on Questionnaire I:

Question I: Which four persons in this class do you like the most? Please write their names in the four blanks below.

Like most _____

Like next most _____

Like third from most _____

Like fourth from most _____

This question was used to identify the first liking choice of each student, to ascertain the degree to which that first choice reciprocated with liking for his chooser, and to ascertain the relative liking status of each student among his or her classmates. The nature of the question allows for the possibility that an S could put as his first liking choice either his "best friend" (or most frequent companion) or a classmate who was liked or admired "from afar" (a classroom star, for example).

Regarding reciprocation by a student's first liking choice, the following notation will be used throughout this report: "1-1" indicates a pair of Ss, each of whom chooses the other as his or her most liked classmate; "1-2" indicates a pair in which the Student ("A") who chose another as his first choice was given a second choice in return by his classmate ("B"), and so on. A "1-0" pair indicates that A chose B as his most liked classmate, but B did not list A at all in answer to the above question. Table 3 displays the distribution obtained.

TABLE 3

Distribution of Pairs by Degree of Reciprocation of First Liking Choices*

Fall

Degree of Reciprocation:		1st Choice		2nd Choice		3rd Choice		4th Choice		Unreciprocated		Data Lacking	
	Sex:	B	G	B	G	B	G	B	G	B	G	B	G
Grade Levels:	4	15	15	8	14	6	9	4	4	31	33	4	1
	5	16	21	11	16	7	7	7	3	31	22	1	0
	6	17	20	13	12	5	6	6	3	15	22	1	0
Totals:		48	56	32	42	18	22	17	10	77	77	6	1
		104		74		40		27		154		7	

Spring

Degree of Reciprocation:		1st Choice		2nd Choice		3rd Choice		4th Choice		Unreciprocated		Data Lacking	
	Sex:	B	G	B	G	B	G	B	G	B	G	B	G
Grade Levels:	4	12	10	8	16	10	11	7	8	24	33	4	2
	5	17	20	14	12	8	8	4	4	27	16	7	3
	6	9	15	7	10	6	6	7	5	24	25	5	1
Totals:		38	45	29	38	24	25	18	17	75	74	15	5
		83		67		49		35		149		20	

*All cross-sex first choices have been omitted. It was felt that cross-sex nominations introduced a variable of little importance; moreover, there were too few cases to make any statements about them as a distinct class. In fall, 20 boys chose girls first; 13 of these were unreciprocated (1-0). Nine girls chose boys first; 6 of these were unreciprocated. From fall data, only 1-1 pairs were used for analysis. Of these only one was a cross-sex pair. In spring, 27 boys chose girls first; of these, 23 were unreciprocated; 19 girls chose boys first, with 18 going unreciprocated.

Table 3 reported the frequencies of five degrees of liking returned by most liked Ss to the children choosing them. It seems worthwhile to convert these same data to percentages.

TABLE 4

PERCENTAGES OF PAIRS BY DEGREE OF RECIPROCATION FROM FIRST LIKING CHOICE

Grade	Fall Degree of Reciprocation											
	Boys					Totals	Girls					Totals
	1	2	3	4	0		1	2	3	4	0	
4	23	13	9	6	49	100	20	19	12	5	44	100
5	22	15	10	10	43	100	31	23	10	4	32	100
6	30	23	9	9	40	100	32	19	9	5	35	100
All Grades	25	17	9	9	40	100	27	20	11	5	37	100
All Ss	26	18	10	7	39	100						

Grade	Spring											
4	20	13	16	12	39	100	13	21	14	10	42	100
5	24	20	11	6	39	100	33	20	13	7	27	100
6	17	13	12	13	45	100	25	16	10	8	41	100
All Grades	20	16	13	10	41	100	23	19	13	8	37	100
All Ss	22	17	13	9	39	100						

STABILITY OF INTERPERSONAL LIKING CHOICES

Research findings have been cited earlier regarding the stability over time of interpersonal liking choices among

children. In this population students' liking choices were compared across time to determine the frequencies of four degrees of liking reported at one time for those classmates named most liked and next most liked at the other time. In Table 5, showing these comparisons, it can be seen that in this population 30% of the children still like the same person best in spring that they liked most in fall. Forty percent of children's first choices in both fall and spring were not among the liking person's four most liked classmates at the other time of the year. The remaining 30% of children's first choices at one time were chosen second, third, or fourth at the other time. Fifty-two percent of fall second choices were not chosen at all in spring, and 54% of spring second choices were not among the choosing person's four most liked classmates in fall.

TABLE 5

NUMBERS (AND PERCENTS) OF FALL FIRST AND SECOND CHOICES RECEIVING FOUR DEGREES OF LIKING IN SPRING AND SPRING FIRST AND SECOND CHOICES RECEIVING FOUR DEGREES OF LIKING IN FALL

Degree of Liking in Fall	Degree of Liking in Spring					
	1st	2nd	3rd	4th	0	Total
1st	151(30)	64(12)	50(10)	40(08)	199(40)	504 (100)
2nd	73(14)	79(16)	38(10)	42(08)	264(52)	496 (100)
3rd	43(09)	49)10)				
4th	36(07)	39(08)				
0	208(40)	278(54)				
Total	511(100)	509(100)				

LIKING STATUS

A child's liking status score was derived by attaching a value of 4 to each first choice received by him, a weight of 3 for a second choice, 2 for a third choice, and 1 for a fourth choice. All his weighted liking receptions were summed and children were rank-ordered separately by sex, classroom, and time (fall or spring).

I was aware of the risks one runs in attaching such weights to the data and then attempting to construct a single liking dimension by means of them. However, it seemed clear that a first choice did not mean the same thing as a fourth choice, either to me as a researcher or to the children who answered the question. Thus, it seemed imperative to handle the two differently, somehow. On the other hand, simply to keep them separate and have four separate indices of popularity for each child would leave the data in such a complex state that it would contribute very little to an increased understanding of liking status in the classroom. Consequently, a method of assigning different weights to the four ranks of liking was used.

To ascertain the difference such a weighting method makes in the rank order of students' received-liking scores, the rank order thus obtained was compared with the rank order obtained by a simple unweighted addition of the number of times each student's name appeared in answer to question 1, Questionnaire I. Data on 182 Ss in six classes were used.

The results are presented in Table 6. The number of

inversions in rank order position was counted. If one S changed position in the hierarchy so as to have, by the second method of coding the data, the same score as an S who was higher or lower on the weighted scale, this was not an inversion. An inversion is considered to have occurred when, for any possible pair of same-sex Ss, one S is higher (or lower) than the other in the hierarchy of weighted scores and is lower (or higher) than that S in the hierarchy of unweighted scores.

The number of inversions and the number of positions altered by inversions are relatively few, then, in the six classes sampled. The primary effect of weighting nominations

TABLE 6

NUMBER OF INVERSIONS IN RANK ORDER POSITIONS: A COMPARISON OF TWO METHODS OF SCORING RECEIVED LIKING (FALL DATA)

Number of Rank-Order Positions Involved in the Inversion:	Boys	Girls
Inverted pairs of Ss adjacent to each other in both rank-orders	8	18
Inverted pairs of Ss adjacent in one rank-order; separated by one classmate in the other	4	3
Inverted pairs of Ss adjacent in one rank-order; separated by two classmates in the other	1	1
Inverted pairs of Ss; separated by one classmate in both rank order hierarchies	0	1
Total number of Inversions	13	23

differentially was to increase discrimination among Ss. The numbers of Ss sharing the same score with at least one other same-sex S, using weighted scores, were 32 for boys, 45 for girls. Using unweighted scores the numbers were 46 for boys and 76 for girls.

Definition of "High Status" and "Low Status" (Liking)

In explaining the manner in which students were categorized as having high or low liking status, it seems worthwhile to examine the actual distribution of received liking scores in one of the classrooms.

One accepted convention, of course, is to split such distributions at the median and call one group high status and the other low status. And I did attempt to make the N's as nearly equal as possible in the two categories and still represent the distribution with something akin to accuracy. However, the median split is, of course, merely an arbitrary convention. There is nothing about the relations or the distribution of liking in a group which dictates that exactly half shall in fact be or be seen as having low status and the other half as having high status. On the contrary, it may be that in a given group of twelve only one or two are accorded distinctly lower (or higher) liking by the other ten or eleven members. Given the distribution reproduced in Table 7 it seemed a patent misrepresentation of the data to categorize those boys who received eleven and twelve points as low status. Five points separate the boy with eleven points from the next lowest boy; the boy with eleven points has more than the average number of points available per student in the class

as a whole, and from eleven up there are three boys separated by just one point apiece.

TABLE 7

AN ILLUSTRATIVE DISTRIBUTION OF RECEIVED LIKING SCORES IN ONE CLASSROOM

Weighted Liking Scores: No. of Points:	No. of Boys	No. of Girls	Weighted Liking Scores	No. of Boys	No. of Girls
0	0	2	14	0	0
1	1	2	15	1	0
2	1	3	16	0	4
3	0	3	17	0	0
4	1	0	18	1	1
5	0	0	19	0	0
6	1	0	20	0	0
7	0	0	21	1	0
8	0	3	22	0	0
9	0	3	23	1	1
10	0	3	24	0	0
11	1	0	25	0	0
12	1	0	26	1	0
Totals				12	23

Thus, in an attempt to accord more weight to the data than to convention, the distribution of boys represented above was split at the natural break in the distribution; four boys were categorized as having low status, and eight boys were categorized as having high status in this group. Similarly, for the girls, ten were termed low status, thirteen were termed high status, in accord with the natural break in

the distribution of points between three and five. Over all classes, this method led to the distribution of high and low status by sex, grade level, and time presented in Table 8.

TABLE 8

DISTRIBUTION OF HIGH AND LOW STATUS FOR BOYS AND GIRLS IN FALL AND SPRING

	Fall				Spring			
	Boys		Girls		Boys		Girls	
Status:	High	Low	High	Low	High	Low	High	Low
Grade Level: 4	47	45	49	49	46	45	48	51
5	47	53	49	46	50	54	45	47
6	45	41	48	43	41	43	46	43
Totals	139	139	146	138	137	142	139	141

Any classroom group of same-sex peers in which one status category exceeded the other by three Ss also had a break in the distribution of scores equal to at least three points. In no classroom did one category exceed the other by more than four Ss.

As can be seen, when the number of students assigned high and low status in this manner is summed for each sex and grade level the total numbers of high and low status Ss are very nearly equal. And, in fact, it is advantageous to have nearly equal N's in one's subject-groups if one wishes to make statistical comparisons between groups.

In individual classes, however, the use of the method under discussion did result in a sizable number of students being categorized differently than they would have been if a

median split criterion alone had been used. And in many instances, this resulted in a relatively unequal distribution of same-sex students in the class into high and low status categories. Thus, even though the Ns summed over all classes are nearly equal, as they would have been had a simple median split been used, different students from different classes make up the Ns on either side of the quasi-median split represented by these summed Ns..

COOPERATIVENESS WITH TEACHER

The index of a child's publicly perceived cooperativeness with the teacher was derived from two questions similar to Question 1, quoted above. These were Questions 11 and 12 on Questionnaire I.

Question 11: Which four persons in this class do you think are most active in cooperating with the teacher, with what the teacher wants and with what the teacher is trying to do?

	Pupil's name
Most cooperative	_____
Next most cooperative	_____
Third most cooperative	_____
Fourth most cooperative	_____

Question 12: Which four persons in the class do you think are the most active in paying no attention or going against what the teacher is trying to do?

	Pupil's name
Most going against	_____
Next most going against	_____
Third from most going against	_____
Fourth from most going against	_____

The same weighting procedure as was used for Question I was used in coding this data. Only this time, the weighted answers from both questions 11 and 12 were collapsed to form a single index. For the same reasons I gave above with regard to liking status, I wanted one dimension of cooperativeness with the teacher, not one dimension for cooperativeness, and another for uncooperativeness. To achieve the desired unity, I subtracted each child's total weighted score for uncooperativeness from his score for cooperativeness; the children in each classroom were then rank ordered on this basis.

TABLE 9

METHOD OF WEIGHTING NOMINATIONS FOR COOPERATIVENESS AND UNCOOPERATIVENESS WITH THE TEACHER

Nominations	Number of Points
Most cooperative	4
Next most cooperative	3
Third most cooperative	2
Fourth most cooperative	1
Most goes against teacher	-4
Next most in going against teacher	-3
Third most in going against teacher	-2
Fourth most in going against teacher	-1

Thus, Bessie May might have been named the very most cooperative by two classmates (four points from each of two persons equal eight points), the third most cooperative by one student (+2 points), and the second most uncooperative by one student (-3 points). Bessie May's resultant score on the cooperative-uncooperative dimension is (8 + 2 - 3) = 7.

INDICES OF AGREEMENT

1. Attraction Ratings

The primary measure of agreement between pair-members was derived from Questionnaire VI (Cf. Appendix), on which every S in the class rated his degree of positive or negative attraction for every class member including himself on a nine-point scale, from 1 (complete liking), through 5 (an even balance between liking and disliking) to 9 (complete dislike). For each classmate rated, the absolute difference between the ratings given by A and by B was obtained. Such a difference score could range from 0 to 8. These differences were summed for all the classmates rated by the pair, and the sum was divided by the number of classmates rated. This yielded an average difference or discrepancy score for every pair, and all pairs could be rank-ordered according to the size of their discrepancy scores. A median split was then used to define categories of student-pairs having high and low agreement. For every pair, separate discrepancy scores between pair members were obtained from ratings of boys, their ratings of girls and their ratings of all classmates.

The degree of absolute agreement between children who like each other is shown in Table 10.

It can be seen that boys had slightly less agreement than girls at each grade level and that for both sexes agreement declined as grade level increased, except in the case of 6th grade girls. This group had the highest average agreement score of all.

TABLE 10

AVERAGE DISCREPANCY SCORES ON ATTRACTION RATINGS OF CLASS MEMBERS BETWEEN MEMBERS OF 1-1 PAIRS IN SPRING BY SEX AND GRADE LEVEL

Grade	Average Discrepancy Scores					
	Boys	No. of Pairs	Girls	No. of Pairs	Boys and Girls	No. of Pairs
4	2.15	12	2.10	10	2.12	22
5	2.27	17	2.22	19	2.24	36
6	3.18	8	1.85	15	2.31	23
All Grades	2.43	37	2.07	44	2.23	81

2. Attitudes toward School-related Issues

Seven items were used to form a composite index of agreement about school-related issues. Three of these were questions 4, 5, and 7 from page two of Questionnaire IV. The children were presented with these statements: "schoolwork is fun to do," "the teacher really understands how pupils feel," and "the teacher expects pupils to put too much time on schoolwork." Each statement was follwed by the numbers 1 through 5, where 1 = I agree almost always

2 = I agree more than I disagree

3 = I agree as often as I disagree

4 = I disagree more than I agree

5 = I disagree almost always.

The children were instructed to circle the number which showed how they felt about each of the three statements. For each item, a pair of Ss was scored as agreeing if the Ss gave the same response or immediately adjacent responses (e. g.,

a 2 and a 3, or a 4 and a 5). Otherwise they were scored as having disagreed.

Four items were also used from Questionnaire V:

CLASSROOM LIFE

Instructions: Circle the number of the statement that best tells how this class is for you.

A. Life in this class with your regular teacher

1. Has all good things
2. Has mostly good things
3. More good things than bad
4. Has about as many good things as bad
5. More bad things than good
6. Has mostly bad things

B. How hard are you working these days on learning what you are being taught at school?

1. Very hard
2. Quite hard
3. Not very hard
4. Not very hard at all

E. Working in groups is fun

1. Always
2. Most of the time
3. Sometimes
4. Never

G. How good is your schoolwork compared to the work of others your same age?

1. Much better than most
2. A little better than most

3. About the same as most

4. Not quite as good as most

5. Much worse than most

For items A, E, and G, the criterion for agreement was the same as for the three items from Questionnaire IV. For item B only, Ss were scored as being in agreement if both answered 1 or 2, or if both answered with a 3 or a 4. If one S circled 1 or 2, and the other circled 3 or 4, they were scored as disagreeing.

For item B, it was judged that the question, as it is worded, basically elicits a distinction between Ss who report that they are working hard (quite hard or very hard) and Ss who report that they are not working hard (not very hard or not hard at all). In fact there seems to be almost no semantic distinction between "quite" and "very"; so that a student most probably would choose one rather than the other only because of his preference for one term rather than the other or because of the ordinal numbers which precede them.

At any rate we felt that numbers 1 and 2 were not different enough in wording to attempt to discriminate between them for the purpose of our analysis. It seemed reasonable to attempt to detect relatively gross similarities and differences in predicting from balance theory but the difference between very hard and quite hard and between not very hard and not hard at all are so small on the face of it that it did not seem meaningful to distinguish between them as responses viewed in a balance theory context.

Likewise, there seemed no reason to apply one code or

category to a pair of students in which one says very hard and the other not very hard and another code to a pair of Ss in which one says quite hard and the other not very hard or not hard at all.

These items were selected for analysis because they seemed best calculated to elicit a child's attitudinal responses to objects rather than just the way he perceived something. At that, Newcomb (1961) had found in his particular setting generally weaker confirmation for balance hypotheses regarding comparable attitude-objects than he obtained with respect to attraction to other people. We suspected a strong social desirability bias would render a number of school-related questions useless for our purposes because too great a majority of Ss would give the socially desirable answer. A visual scanning of the code sheets for six to eight classes made it apparent that this was true for items one and two on page two, Questionnaire IV, certainly to an extent that would render these items useless for analysis of balance effects.

The seven items used were pooled to form one index of agreement concerning school-relevant issues. Each pair of Ss could have from zero to seven agreements. When data was missing on one or more items for one or both members of a given pair, their ratio of actual agreements to total possible agreements was converted to the nearest equivalent score with a denominator of seven. There were no pairs with fewer than four items on which agreement could be determined. Pairs with six or seven agreements out of a possible seven were defined

as having high agreement; pairs with five or fewer agreements were defined as having low agreement. Cutting the distribution at this point yielded high and low agreement categories with the most nearly equal number of students. In other words, given that all pairs having the same number of agreements were put in the same category (high or low), I used the closest possible approximation to a median split.

UTILIZATION OF INTELLIGENCE

Teachers rated the degree to which each student was utilizing his or her intelligence. These ratings were made once in fall and again in spring. The scale for this measure was as follows:

Rating Scale

This student is utilizing his intelligence:

1. Very highly--almost fully
2. Highly--could improve but doing very well
3. Somewhat--enough to get by
4. Not highly--insufficiently
5. Hardly at all--almost no utilization

NUMBERS OF CHILDREN AVAILABLE FOR EACH HYPOTHESIS

Since the basic social unit required for testing our balance hypotheses is a dyad, the numbers in Table 3 represent the largest possible numbers of students available for testing any hypothesis. However, variables other than the strength of the liking relation are also necessary to the testing of every hypothesis. And data for a given pair-member on one or more of these variable may be lacking,

either because the student was absent on the day a given questionnaire was administered and never filled out this questionnaire (though most cases of absenteeism were picked up within a week), or because he chose not to answer or could not answer or overlooked a given question, or because the student entered or left the school during the course of the school year. And since the absence of data on any variable relevant to a given hypothesis for either of the students in a pair eliminated that pair from the sample for that hypothesis, the Ns used will vary from one hypothesis to another. For every hypothesis, however, all available Ss have been used; any exceptions to this rule will be explicitly stated.

CHAPTER 3

HYPOTHESES AND SUPPORTING RESEARCH

The first hypothesis is intended to test for the presence of a relationship basic to balance theory. It asserts that friends will agree more often than non-friends about jointly relevant objects of importance to each.

> Hypothesis 1: High agreement regarding attraction to classmates will be found more often among pairs of students in which each member of the dyad chooses the other as his most liked classmate, than among pairs in which neither member lists the other among his four most liked classmates.

Byrne (1962) lists a number of studies dating from the 1940s showing the relation between friendship and agreement. Newcomb (1961) reports supporting data in a study of college undergraduates, and Nelson (1963) found that boys perceived those they liked best as having similar attitudes toward aspects of summer camp more often than those they liked least.

> Hypothesis 2: Among pairs of Ss who choose each other as most liked in the fall, those pairs which have high agreement in fall will

retain a higher degree of liking for each other in spring than pairs with low agreement in fall.

Given high agreement between Ss who like each other we have a balanced condition. By definition, this means fewer unbalanced forces at work which could contribute to a change in the system; rather, this balance of forces is expected to be relatively stable, with perhaps increasing liking and agreement. On the other hand, low agreement between two Ss who have high mutual attraction constitutes a state of relative imbalance, thereby inducing a strain in one or both Ss to alter the system in such a way as to restore it to a balanced state.

We have seen a number of ways in which this can be accomplished. Given that our index of agreement is derived from the differences between A and B in their liking for all their classmates, however, the likelihood of balance being achieved by changes in attitude by one or both members seems relatively remote. And since we are concerned only with objectively balanced complex systems of co-orientation, the only alternative remaining in these terms is for at least one member of the pair to reduce his liking for the other. Thus we predict that low agreement pairs will report less liking for each other in spring than high agreement pairs.

Research support for this is reported by Shapiro (1966), who found that frequency of dissolution of friendship ties among children of both sexes aged 8 to 15, was significantly

associated with the degree of discrepancy in their orientations to camp-related matters. This finding emerged regardless of the importance to the Ss of the objects, and was particularly strong when Ss were assigned to the same living group. Taylor (1966) also found that college Ss involved in an unbalanced state made frequent use of an alteration in their liking for B as a means of restoring balance to their system of orientation. And Newcomb (1961) found that high pre-acquaintance agreement between college Ss predicted to later mutual liking.

> Hypothesis 3: In spring, there will be more agreement between friends who have had high mutual liking in fall than between friends with low mutual liking in fall.

This hypothesis is based on the postulate that the degree of strain toward balance--to agreement, in the case of friends--increases with the amount of communication Ss have with each other. It seems reasonable to assume that Ss who have been friends since fall will have shared their views of the class and of classmates more thoroughly than recently formed friendship pairs.

The importance of length of acquaintance and of opportunity for communication has been strongly confirmed in Newcomb's study. His prediction was that "on later but not on earliest acquaintance, very high attraction will occur more frequently on the part of pairs whose agreement is very high than on the part of other pairs" (1961,p.80). Nelson (1963)

also found support for this among 432 boys at an 8 week summer camp. Of course, the hypothesis in this study is predicated on more than length of acquaintance or opportunity to communicate. The independent variable here is really the stable long-term liking of A and B for each other, which includes acquaintance and, in our sample, the opportunity to communicate.

> Hypothesis 4: There will be a positive relationship between degree of reciprocated liking within pairs and degree of agreement between pair members.

Because of the reasoning involved in the above quote from Newcomb, this hypothesis will be tested only in spring. Since we are testing for actual rather than perceived agreement, the degree of attraction of B for A is as much a factor as the degree of attraction of A for B. That A has high attraction for B is a given in the manner in which we shall operationalize this hypothesis. Thus we shall compare pairs with varying degrees of BA liking. Highly reciprocating pairs should have more agreement concerning issues of relevance and importance to both because both parties will be motivated to seek it, as well as because they are likely to share more communication than less highly reciprocating pairs. Newcomb reports: "We have found that the association between high pair attraction and high pair agreement, which on early acquaintance was very slight, becomes significant on late acquaintance . . . " (1961, p. 84).

> Hypothesis 5: Pair members who choose each

other as their most liked classmates will be nearer to each other on a measure of cooperativeness with the teacher derived from the perceptions of their classmates than members of pairs in which neither S chooses the other among his four most liked classmates.

This hypothesis provides an opportunity to test whether a sociometric dimension which would be presumed to reflect students' attitudes follows the expectations one would have for the attitudes themselves on the basis of balance theory. Cooperativeness with the teacher was selected for testing because this sociometric dimension seemed the most likely of those for which we had data to reflect student attitudes, to which balance theory applies directly. The other sociometric dimensions were attributed influence, academic ability, and helpfulness to other students. Direct nominations of those whom Ss liked best and knew least well were also available. In one very relevant study Zweier (1964) found that children in one third grade classroom and one fifth grade classroom communicated more with classmates who were similar to them in peer-attributed social power, intelligence, and popularity.

Hypothesis 6: Pair members who choose each other as their most liked classmates will be nearer to each other in teacher-rated utilization of intelligence than members of pairs in which neither S chooses the other among his four most liked classmates.

The rationale for this hypothesis is basically the

same as for the previous hypothesis. The likelihood of confirmation seems less, however, both because of potential distortions in the teacher's perceptions and because a child's actual utilization is less observable and perhaps more subject to a variety of factors than his cooperativeness with the teacher.

The next two hypotheses are based on the postulate that for high-status Ss, agreement will tend to determine liking, whereas for low status Ss, reciprocation will tend to determine liking. The reasoning behind this is as follows: A's liking for B will be determined by B's liking for A and by B's agreement with A (regarding objects of at least reasonable importance to A). But these forces in turn will be greater or less depending on A's need for liking relative to his need for agreement. And A's needs, in turn, will be partially determined by the degree to which they are satisfied outside the AB relationship. In other words, A's needs and his interpersonal relationship to B are part of a field of forces. We have information about the field of liking forces in which operate, by inference, A's need for liking, and B's liking for A. We know from A's relative liking status his degree of "objective" deprivation of or endowment with liking from his peers in the classroom.

We shall make the assumption that need for liking, for most Ss, will take precedence over the need for agreement, after the fashion of the needs in Maslow's hierarchy. And so we will hypothesize that for an S who received a good deal of liking, the dominant force influencing his selection of a friend will be need for agreement, whereas for an S

who lacks liking, the need to be liked will determine his own liking of others.

Hypothesis 7: High status Ss will have greater agreement with their liking choices than low status Ss with theirs, controlling for reciprocation.

Since Ss with low liking status are presumed to have a high need to be liked by someone, and since we postulate that this need will be stronger than their need to be in agreement with someone, regarding matters of some importance to them, we expect that Ss with low liking status will nominate as their most liked classmates other Ss who are either quite popular (regardless of whether or not these stars like or have attitudes similar to the low status Ss), or who are seen by the low status Ss as liking or able to like them, again with little regard for whether or not these choice-objects hold similar opinions.

Conversely, Ss who are liked by many of their classmates will be more attracted to those who share their views on matters of importance to them. Consequently, the classmates they choose will be those who have a high degree of agreement with them.

Thus, we hypothesize that:

Hypothesis 8: Among 1-1 pairs with low agreement in fall, more high than low status Ss will show diminished liking for their fall first choice in spring.

CHAPTER IV

OPERATIONALIZATION OF HYPOTHESES AND RESULTS

> Hypothesis 1: High agreement will be found more often among pairs of students in which each member of the dyad chooses the other as his most liked classmate, than among pairs in which neither member lists the other among his four most liked classmates.

Hypothesis 1 was tested on 81 1-1 pairs and 81 0-0 pairs in the spring. The 1-1 pairs were all the pairs of both sexes in which each member chose the other as his most-liked classmate of the same sex. The control pairs were determined by randomly selecting one member from each of the 1-1 pairs, and finding all the same-sex classmates who had never chosen nor been chosen by this student at all in answer to question 1 on Questionnaire I in fall or spring. One of these was randomly selected to be paired with the randomly selected student from the 1-1 pairs, thus forming the 0-0 control pairs. In only one case was this not possible; the control member of the 0-0 pair in this case had given the classmate with whom he was paired a third liking choice in the fall; this was the closest approximation we could make to a 0-0 pair for the 1-1 pair involved.

The purpose served by using one randomly selected member from each 1-1 pair in the formation of 0-0 control pairs was that of maximizing the comparability of the two groups, or, conversely, minimizing the possibility of contaminating factors in the control group. In the formation of the 0-0 control pairs, two students were paired who had not chosen each other among their top four choices in either fall or spring in order to maximize the detectability of the predicted effect.

There was a relatively small number of children of one sex in any classroom, approximately 14-15; and given the fact that each S made four choices in both fall and spring, usually all from among his or her own sex, it turned out that there was at least a weak one-way liking at one time or the other between any member of a 1-1 pair and a great majority of his or her same-sex classmates.

The choice of attraction ratings of classmates as the source of a measure of agreement between pairs was based on the expectation that peers, especially those of the same sex, would constitute attitude objects which were both important to the Ss and relevant to their dominant liking relationships.

All 162 pairs were rank-ordered by the average discrepancy score in their ratings of all members of the class; a median split was used to determine high and low agreeing pairs. Unless otherwise noted, this was the method used to determine high and low agreement for those hypotheses involving agreement between pair members.

The following results were obtained:

TABLE 11

THE NUMBER OF PAIRS WITH HIGH AND LOW MUTUAL ATTRACTION HAVING HIGH AND LOW AGREEMENT ON ATTRACTION RATINGS OF CLASSMATES IN SPRING

Agreement	Mutual liking		
	High	Low	Totals
High	49	32	81
Low	32	49	81
			162

Chi square = 6.32 $p < .02$ (very near to .01)
Phi coefficient = .21

The predicated results did emerge, but the relationship between liking and agreement was not so strong as was expected.

Chi square values were computed for tables of girls and boys separately, rating all class members, rating only same-sex class members, and rating only opposite-sex class members. It was expected that, generally, balance hypotheses would be more strongly confirmed for ratings of same-sex classmates than for ratings of opposite sex classmate. This expectation was based on the logically prior expectation that, for Ss in this age-range, same-sex classmates would satisfy the criteria of importance and mutual relevance for X-objects better than opposite-sex classmates. And though accepted significance levels were not often reached, the direction of results regularly confirmed this expectation. The results obtained are illustrated in Table 12. None of these tables yielded significant results, though all but the table of boys

rating girls was in the predicted direction. Girls tended to be nearer to significance than boys.

TABLE 12

NUMBERS OF PAIRS BY DEGREE OF AGREEMENT IN RATING OWN AND OPPOSITE SEX AND DEGREE OF MUTUAL LIKING

Rating own sex: Agreement	Boys			Girls		
	Mutual Liking			Mutual Liking		
	1-1	0-0	Totals	1-1	0-0	Totals
High	21	16	37	27	17	44
Low	16	21	37	17	27	44
			74			88

Rating opposite sex: Agreement	Boys			Girls		
	Mutual Liking			Mutual Liking		
	1-1	0-0	Totals	1-1	0-0	Totals
High	18	19	37	25	19	44
Low	19	18	37	19	25	44
			74			88

Newcomb (1961) had found much stronger agreement between high-attraction pairs of college men regarding others toward whom one member also had high attraction than regarding mutual acquaintances or house members in general. So we decided to test the same hypothesis for agreement regarding pair-members' choices of second, third, and fourth most liked classmates. If one member of a pair chose as his second, third, or fourth choice a classmate who was also chosen by the other member of

the pair, whether second, third, or fourth, it was considered an instance of agreement (a convergent choice). The results obtained are presented in Table 13.

TABLE 13

NUMBER OF PAIRS WITH HIGH AND LOW MUTUAL ATTRACTION HAVING CONVERGENT AND INDEPENDENT CHOICES OF 2nd, 3rd, and 4th MOST-LIKED CLASSMATES

	Mutual Liking	
	1-1	0-0
Number of convergent choices	107	48
Number of independent choices	136	195

Chi square = 31.87, p = much less than .001
Phi Coefficient = .26

Tested in this form, results for both male pairs and female pairs separately were significant at better than .001. These results were gratifying, but again the strength of the relationship was not particularly great.

The question might be raised whether our manner of determining membership in 0-0 control pairs yielded pairs who not merely did not choose each other but who actively disliked each other, thereby altering the hypothesis tested. We ran a check on this; using Questionnaire VI we were able to ascertain the ratings on the nine point liking scale given each other by individual members of 0-0 pairs. Ratings of 1, 2, or 3 were classified as liking; ratings of 4, 5, or 6 were classified as neutral; ratings of 7, 8, or 9 were classified as dislike. The distribution of individual

ratings was as follows: liking--77(48%), neutral--55 (34%), disliking--28 (17%), no data--2 (total = 162).

It could also be asked whether most of those who were paired with one member of 1-1 pairs to form 0-0 pairs had low liking status. If this were the case we would have a potentially contaminating, uncontrolled factor, a factor which in fact we predict will influence balance, in hypotheses 7 and 8. In any case, it would qualify the nature of the sample.

The comparison of the status distributions for control members of 0-0 pairs and for all other Ss is presented in Tables 14 and 15.

A chi-square was computed for the totals of each group with high and low status. Results are presented in Table 15. Assuming that both groups belong to the same population as far as status is concerned, the obtained difference in the distribution of liking status between the two groups could occur by chance fifteen times in a hundred samples. Thus, there was a slight bias toward low status among control members of 0-0 pairs. Given the relative centrality of the distribution of liking and the way members of this group were chosen, it would be surprising if there were not a bias toward low status among these Ss.

When the status of control members of 0-0 pairs was compared with that of the members of 1-1 pairs for whom they were substituted in the forming of the 0-0 pairs a significant difference emerged (Table 16). Thus, in the

testing of Hypothesis 1, as I have operationalized it, the effects of status on agreement cannot be held constant for 1-1 and 0-0 pairs. The effectsof the liking status of pair members on their degree of agreement were, however, ascertained in other hypotheses. (Hypotheses 7 and 8), where degree of mutual liking was held constant across groups of pair members having high and low status. These results indicated no significant association between liking status and the degree of agreement an S had with his most liked classmate in spring regarding attraction to class members.

This finding together with the results obtained for Hypothesis 1 tend to support the interpretation that 1-1 pairs differed significantly from 0-0 pairs in spring by reason of the degree of intra-pair attraction (and not because the members of 1-1 pairs also differed significantly from 0-0 pairs in liking status).

TABLE 14

DISTRIBUTION OF CONTROL MEMBERS OF 0-0 PAIRS AND OF ALL OTHER Ss BY GRADE LEVEL AND LIKING STATUS

Grade Level	Control Members of Control Pairs		All Other Students	
	Status		Status	
	High	Low	High	Low
4	7	15	87	81
5	17	19	78	82
6	9	14	78	72
Totals	33 (41%)	48 (59%)	243 (51%)	235 (49%)

TABLE 15

LIKING STATUS OF CONTROL MEMBERS OF 0-0 PAIRS AND OF ALL OTHER Ss IN SPRING

	Liking Status	
	High	Low
Control Members of 0-0 Pairs	33	48
All other Ss	243	235

$X^2 = 2.43$, NS

TABLE 16

LIKING STATUS OF CONTROL MEMBERS OF 0-0 PAIRS AND OF THE MEMBERS OF 1-1 PAIRS WHOM THEY REPLACED

	Liking Status		
	High	Low	Totals
Control Members of 0-0 Pairs	33	48	81
Members of 1-1 Pairs for whom Control Members were substituted in forming 0-0 Pairs	60	21	81
			162

$X^2 = 17.57$, $p<.001$

TABLE 17

NUMBER OF 1-2 AND 0-0 PAIRS HAVING HIGH AND LOW AGREEMENT IN ATTRACTION RATINGS OF ALL CLASSMEMBERS

Agreement	Pairs	
	1-2	0-0
High	40	34
Low	26	47
Totals	66	81

Chi sqaare = 4.33, p.<.05
Phi coefficient = .18

We used the same 0-0 control pairs in a comparison with 1-2 pairs, and obtained the results shown in Table 17. As the result of hypothesis 4 (Table33) shows, it is probable that 1-3 and 1-4 pairs would also have had significantly greater agreement than the 0-0 pairs.

Thus, Hypothesis 1 has been confirmed as stated and has received stronger confirmation when second, third, and fourth liking choices of Ss are used as the object of agreement. However, the phi coefficients have in all cases been relatively low.

> Hypothesis 2: Among pairs of Ss who choose each other as most liked in the fall, those pairs which have high agreement in fall will retain a higher degree of liking for each other in spring than pairs with low agreement in fall.

For this hypothesis it was necessary to measure the degree of liking in spring between classmates who had constituted 1-1 pairs in the fall. The method used was to categorize first and second choices on question 1, Questionnaire I, as high liking, third and fourth choices as moderate liking, and the non-appearance of a name among a child's top four choices as low liking.

TABLE 18

DEGREE OF SPRING LIKING FOR FALL FIRST CHOICES EXPRESSED BY INDIVIDUAL MEMBERS OF FALL HIGH AND LOW AGREEING PAIRS

Fall Agreement	Degree of liking in Spring			
	1 or 2	3 or 4	not chosen	Totals
High	49	15	25	89
Low	38	14	39	91
				180
Chi square = .4.44, NS				

TABLE 19

DEGREE OF WINTER LIKING FOR FALL FIRST CHOICES EXPRESSED BY INDIVIDUAL MEMBERS OF FALL HIGH AND LOW AGREEING PAIRS

Fall Agreement	Degree of liking in Winter			
	1 or 2	3 or 4	not chosen	Totals
High	56	9	19	84
Low	49	15	18	82
				166

Chi square = 1.93, NS

Since the category of moderate liking contains 29 Ss whose presence in this category contributes very little to the testing of Hypothesis 2, it was decided to collapse degree of spring liking into just two categories, high and low. When third and fourth choices are categorized with first and second choices as high liking the results displayed in Table 21 were obtained. However, it seemed rather arbitrary to classify third and fourth choices as high liking since there was really no comparative criterion for making such a nominal allocation. Consequently, I decided to compare the degree of spring liking for fall first choices by Ss with high fall agreement with the degree of spring liking for fall first choices given by all Ss in the sample; the same was done for Ss with low fall agreement. Each of these comparisons was made by means of a 2 x 2 table in which all four degrees of liking consistuted high liking in spring and no nomination constituted low liking.

Tables were also constructed for each comparison in which only first and second choices were counted as high liking, and

third and fourth choices and the absence of the name in question constituted low liking. Using the former definition of high and low spring liking, the difference in spring liking given by Ss who had had high agreement with their first choices in fall and all Ss was significant at approximately .06; using the second definition of high and low liking, the difference was significant at .05. The differences between Ss with low fall agreement and all Ss in degree of spring liking for fall first choice were not significant under either definition of high and low spring liking.

The slight increase in the size of the chi-square values obtained in comparisons just described is probably achieved by means of the larger Ns involved when all Ss serve as the control group in the comparison.

To summarize the results for Hypothesis 2 described so far, it can be said that the prediction falls just short of being verified at the .05 confidence level.

Hypothesis 2 was also tested using the degree of liking in winter (Jan.--Feb.). The results obtained are shown in Table 19. The winter test was run in the expectation that a stronger relationship might emerge then, since all Ss might have changed friends to a high degree by spring regardless of degree of agreement in fall, thereby obscuring the magnitude of the predicted effect. Given that there are data for 14 more individuals in spring than in winter, not much can be inferred from comparing the two tables.

It seemed worthwile to investigate another possibility regarding this hypothesis. For it is possible that fall

friends with low agreement who still had high liking for each other in spring had managed to balance their systems of co-orientation by reaching a higher degree of agreement. And, in fact, 8 of the 9 low-agreement pairs who were still 1-1 in spring had decreased their discrepancy scores; the average decrease for all 9 pairs was .98, representing a sizable increase in agreement, nearly 1 point on a 9-point scale for each of approximately 30 persons rated. There were three fall 1-1 pairs who changed to 1-2 pairs in spring, all of whom increased their discrepancy scores, by an average of .31. The remaining possible combinations of relatively high mutual liking in spring (1-3 pairs and 2-2 pairs) contain no former 1-1 pairs. The one fall 1-1 pair who were 1-4 in spring decreased their discrepancy score by .78.

When this second hypothesis was tested for boys and girls separately, the results shown in Tables 22 and 23 were obtained. There was a tendency for boys who had had high agreement with their first choice in fall to have higher liking for that classmate in spring than did boys who had had low agreement with theirs. This tendency reached the .05 confidence level when degree of spring liking was distributed into two categories, but not when three catagories of spring liking were used.

This hypothesis was also applied to the composite index of agreement regarding classroom-related attitudes on the part of pair members. Table 24 presents the results.

TABLE 20

DISTRIBUTION OF MUTUAL LIKING IN SPRING BETWEEN MEMBERS OF THE FORTY-SEVEN FALL 1-1 PAIRS WITH LOW AGREEMENT

Spring mutual liking	1-1	1-2	1-3	1-4	1-0	0-0	other	no data
Number of pairs	9	3	0	1	6	11	12	5

TABLE 21

TWO DEGREES OF SPRING LIKING FOR FALL FIRST CHOICES EXPRESSED BY INDIVIDUAL MEMBERS OF FALL PAIRS WITH HIGH AND LOW AGREEMENT

Fall Agreement	Degree of Liking in Spring		
	High	Low	Totals
High	64 (72%)	25 (28%)	89 (100%)
Low	52 (57%	39 (43%)	91 (100%)
			180

$X^2 = 3.66$ NS $(.05<p<.10)$

TABLE 22

THREE DEGREES OF SPRING LIKING FOR FALL FIRST CHOICE EXPRESSED BY INDIVIDUAL MEMBERS OF FALL HIGH AND LOW AGREEING PAIRS, SEPARATELY FOR BOYS AND GIRLS

Fall agreement	Degree of Spring Liking			
			Girls	
	1 or 2	3 or 4	not chosen	totals
High	22	9	8	39
Low	20	6	13	39
				78

Chi square = 1.88, NS

			Boys	
	1 or 2	3 or 4	not chosen	totals
High	26	8	6	40
Low	19	6	15	40
				80

Chi square = 5.22, NS

TABLE 23

TWO DEGREES OF SPRING LIKING FOR FALL FIRST CHOICE EXPRESSED BY INDIVIDUAL MEMBERS OF FALL HIGH AND LOW AGREEING PAIRS FOR BOYS

Fall Agreement	Degree of Liking in Spring		
	High	Low	Totals
High	34	6	40
Low	25	15	40
			80

$X^2 = 4.13$, $p<.05$

TABLE 24

DEGREE OF AGREEMENT IN FALL ON CLASSROOM-RELATED ATTITUDES AND DEGREE OF MUTUAL LIKING IN SPRING BETWEEN MEMBERS OF FALL 1-1 PAIRS

Fall Agreement	Degree of Liking in Spring			
	High	Medium	Low	Totals
High	10	12	23	55
Low	18	5	22	55
				110

The data as obtained did not seem to warrant computing a chi square value. The Ns represent pairs. Degree of mutual liking in spring between fall reciprocal first choices was indexed as follows: high--each member of a pair receives a first or second choice from the other; medium--one pair member receives any degree of liking, from a 1 to a 4, and the other receives a 3 or 4; low--any pair in which one member is not named at all by the other on question 1, Questionnaire I in spring. High agreement means the pair members agreed on 6 or 7 out of 7 items, as explained in

Chapter Two.

Using pairs in which fall first choices reciprocated with second, third and fourth choices, the following results were obtained.

TABLE 25

AGREEMENT ON CLASSROOM ATTITUDES AND DEGREE OF LIKING FOR FALL FIRST CHOICE IN SPRING AMONG 1-2, 1-3, and 1-4 PAIRS

Agreement	Degree of Liking for Fall First Choice in Spring			
	High	Medium	Low	Totals
High	14	10	35	59
Low	17	20	31	68
				127

Degree of liking here represents liking in only one direction, the liking a child gives his fall first choice in spring. High indicates that a first or second choice was given, medium indicates a third or fourth choice, and low indicates no choosing of the other in spring. Again, the results here are not strong enough to warrant computing a chi square.

Hypothesis 3: In spring, there will be more agreement between friends who have had high mutual liking in fall than between friends with low mutual liking in fall.

This hypothesis is almost the mirror image of Hypothesis 2. It was tested for the following subsets of our population:

1-- all spring 1-1 pairs of either sex,

2-- all spring 1-2 pairs of either sex,

3-- pairs of boys across 4 levels of reciprocation
rating i - all class members
ii - other boys only,

4-- pairs of girls across 4 levels of reciprocation
rating i - all class members
ii - other girls only.

Three of the eighteen chi square tables tested confirmed the hypothesis at a confidence level of .05:

1) 1-1 pairs of boys in their ratings of boys,

2) 1-1, 1-2, 1-3, and 1-4 pairs of boys in their ratings of boys,

3) 1-3 pairs of boys in their ratings of all classmates.

These three distributions are shown in Tables 26, 27, and 28.

Tables 29, 30, and 31, illustrating the results of all 1-1 pairs rating all classmates, all 1-2 pairs rating all classmates, and 1-1, 1-2, 1-3, and 1-4 pairs of girls rating girl classmembers, respectively, failed to yield significant confidence levels.

TABLE 26

DISTRIBUTION OF 1-1 PAIRS OF BOYS IN SPRING WITH HIGH AND LOW AGREEMENT ON ATTRACTION RATINGS TO OTHER BOYS IN THE CLASS, BY LEVEL OF MUTUAL LIKING IN THE FALL

Spring Agreement on Attraction Ratings of Boys in the Class	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	11	3	4	18
Low	4	1	14	19
				37

Chi square = 9.80, $p<.01$

TABLE 27

DISTRIBUTION OF 1-1, 1-2, 1-3, 1-4 PAIRS OF BOYS WITH HIGH AND LOW AGREEMENT ON ATTRACTION RATINGS TO BOYS IN THE CLASS, BY LEVEL OF MUTUAL LIKING IN FALL

Spring Agreement on Attraction Ratings of Boys in the Class	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	23	7	23	53
Low	14	2	37	53
				106

Chi square = 8.23, $p<.025$

TABLE 28

DISTRIBUTION OF 1-3 PAIRS OF BOYS IN SPRING WITH HIGH AND LOW AGREEMENT ON ATTRACTION RATING OF ALL CLASS MEMBERS, BY LEVEL OF MUTUAL LIKING IN FALL

Agreement on Attraction Ratings of All Class Members	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	6	0	6	12
Low	0	0	11	11
				23

Chi square - 7.44, $p<.025$

TABLE 29

ATTRACTION RATINGS OF CLASS MEMBERS AND LEVEL OF MUTUAL LIKING IN FALL BETWEEN MEMBERS OF SPRING 1-1 PAIRS

Agreement on Attraction Ratings of All Class Members	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	16	10	15	41
Low	12	5	23	40
				81

Chi square = 3.91 NS

TABLE 30

ATTRACTION RATINGS OF CLASS MEMBERS AND LEVEL OF MUTUAL LIKING IN FALL BETWEEN MEMBERS OF SPRING 1-2 PAIRS

Agreement on Attraction Ratings of Class Members	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	10	5	18	33
Low	10	2	21	33
				66

Chi square = 1.52 NS

TABLE 31

AGREEMENT ON ATTRACTION RATINGS OF GIRL CLASS MEMBERS AND LEVEL OF MUTUAL LIKING IN FALL IN PAIRS OF GIRLS WITH SOME DEGREE OF RECIPROCATION FROM FIRST CHOICES

Agreement on Attraction Ratings of Girl Class Class Members	Level of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	19	7	34	60
Low	13	8	39	60
				120

Chi square = 1.52, NS

Hypothesis 3 was also applied to agreement between pair members regarding school-related attitudes.

TABLE 32

AGREEMENT ON SCHOOL-RELATED ATTITUDES AND DEGREE OF MUTUAL LIKING IN FALL AMONG 1-1 PAIRS IN SPRING

Agreement	Degree of Mutual Liking in Fall			
	High	Medium	Low	Totals
High	15	13	21	49
Low	15	4	17	36
				85

The numbers represent pairs. There is clearly not a significant relationship and no chi square was computed.

Hypothesis 4: There will be a positive relationship between degree of reciprocated liking within pairs and degree of agreement between pair members.

To test this hypothesis all spring 1-1, 1-2, 1-3, and 1-4 pairs were rank-ordered together according to discrepancy scores in their ratings of all class members, and a median split was used to define high and low agreement.

Results are shown in Table 33. The hypothesis is clearly not confirmed by this data and no chi square was calculated. Tables were constructed for agreement between pairs of boys only in rating boys, and the same was done for pairs of girls rating girls. Neither of these tables yielded a significant result, although the girls' table at least warranted testing. It yielded a chi square of 3.4 which did not reach a significant confidence level.

TABLE 33

DEGREE OF RECIPROCATED LIKING BY STUDENTS' MOST LIKED CLASSMATES AND DEGREE OF AGREEMENT BETWEEN Ss AND THEIR MOST LIKED CLASSMATES

Agreement	Student Pairs by Degree of Reciprocation from Most Liked Classmates				
	1-1	1-2	1-3	1-4	Totals
High	41	32	22	19	114
Low	40	34	26	14	114
Totals	81	66	48	33	228

Hypothesis 4 was also tested for agreement between pair-members on school-related attitudes, in both fall and spring. Results are presented in Table 34. There is a very slight tendency in the predicted direction, but it is clearly not strong enough to warrant computing a chi square value.

The relationship in spring, as shown in Table 35 appears to be slightly stronger, but still fails to reach an acceptable significance level.

TABLE 34

DEGREE OF AGREEMENT ON SCHOOL-RELATED ATTITUDES AND DEGREE TO WHICH MOST-LIKED PAIR MEMBERS RECIPROCATE LIKING IN FALL

Agreement	Degree of Reciprocation by Most-Liked Pair Members				
	1-1	1-2	1-3	1-4	Totals
High	45	33	16	10	114
Low	45	35	19	15	114
					228

TABLE 35

DEGREE OF AGREEMENT ON SCHOOL-RELATED ATTITUDES AND DEGREE TO WHICH MOST-LIKED PAIR MEMBERS RECIPROCATED LIKING, IN SPRING

Agreement	Degree of Reciprocation by Most-Liked Pair Members				
	1-1	1-2	1-3	1-4	Totals
High	42	34	20	14	110
Low	35	24	25	17	101
					211

Chi square = 2.91, NS

Hypothesis 5: Pair members who choose each other as their most-liked classmates will be nearer to each other on a measure of publicly perceived cooperativeness with the teacher than members of pairs in which neither S chooses the other among his four most-liked classmates.

In operationalizing this hypothesis, all members of each class were rank-ordered according to their weighted score of cooperativeness with the teacher, derived from classmate nominations in answer to questions 11 and 12 on Questionnaire I. All 1-1 and 0-0 pairs were rank-ordered by the number of rank-order positions separating the two members of each pair on cooperativeness with the teacher. A median split in the distribution of rank-order positions separating pair members was used to define those near to and far from each other on cooperativeness. The cut-off was within the set of pairs separated by seven rank-order positions. The results are seen in Table 36. In 39 of 81 1-1 pairs, members were within four rank-order positions

of each other, whereas the 39 0-0 pairs whose members were nearest each other on cooperativeness extended through eight rank-order positions.

TABLE 36

DEGREE OF MUTUAL ATTRACTION BETWEEN PAIR MEMBERS AND PROXIMITY ON PEER-PERCEIVED COOPERATIVENESS WITH THE TEACHER

Intra-pair distance on peer-perceived cooperativeness with the teacher	Degree of Mutual Liking Between Pair Members		
	1-1	0-0	Totals
Near	50	31	81
Far	31	50	81
			162

Chi square = 8.00 $p < .005$
Phi coefficient = .23

TABLE 37

MUTUAL LIKING AND PROXIMITY OF PAIR MEMBERS ON A SCALE OF TEACHER RATED UTILIZATION OF INTELLIGENCE

Degree of Mutual Liking Between Pair Members	Number of Scale Positions separating Pair Members on Teacher-rated Utilization of Intelligence					
	0	1	2	3	4	Totals
1-1	25	17	2	1	0	45
0-0	12	22	8	1	2	45
						90

Chi square = 10.8, $p < .05$ (Nearly .03)

Hypothesis 6: Pair members who choose each other as their most-liked classmates will be nearer to each other in teacher-rated utilization of intelligence than members of pairs in which

neither S chooses the other among his four most-liked classmates.

Because several teachers failed to turn in ratings, data on teacher-rated utilization of intelligence were available for only 45 1-1 pairs, but the results were significant in the predicted direction (Cf. Table 37).

Hypothesis 7: High status Ss will have greater agreement with their first liking choices than low status Ss with theirs, controlling for reciprocation.

Using liking pairs and attraction ratings of classmates derived from spring data, tables were constructed to test this hypothesis for: both sexes separately and together by each of the four levels of reciprocation (from most-liked classmates); for each sex separately, rating only same sex classmates with second, third, and fourth levels of reciprocation together; for 1-1 pairs of each sex separately, rating only same-sex classmates, and for fall 1-1 pairs of both sexes, separately and together, rating all classmates.

For tables involving pairs in which the most-liked classmate reciprocated with a second, third, or fourth choice, it was possible to categorize pairs according to the status of "A," the child who made the "most liked" nomination, and the N of individuals being considered in the hypothesis was the same as the N of pairs. For 1-1 pairs, however, it was necessary to take into account the status of both pair members in every pair and hence to make calculations using the total number of individuals involved, which was twice

the number of 1-1 pairs. For 1-1 pairs in which one member had high status and the other low status, the pair's discrepancy (or agreement) score was entered once in the high-status category and once in the low-status category.

Only one table yielded a significant chi square, though most tables tended in the predicted direction, particularly for boys. In fall, high status members of 1-1 pairs, both sexes together, manifested greater agreement with their most-liked classmates than did low status pairs. The N used is for individual pair members. The results for 1-1 pairs in fall and spring are shown in Tables 38 and 39.

Hypothesis 7 was also tested on agreement of pair members regarding school-related attitudes. Tables 40 and 41 summarize these results. Results for 1-2, 1-3, and 1-4 pairs combined, in fall and spring were not significant.

TABLE 38

LIKING STATUS AND DEGREE OF AGREEMENT ON ATTRACTION RATINGS OF CLASSMATES AMONG MEMBERS OF 1-1 PAIRS, FALL

Agreement	Status		
	High	Low	Totals
High	76	22	96
Low	61	35	96
			192

Chi square = 3.94, $p < .05$
Phi Coefficient = .15

TABLE 39

LIKING STATUS AND DEGREE OF AGREEMENT ON ATTRACTION RATINGS OF CLASSMATES AMONG MEMBERS OF 1-1 PAIRS, SPRING

Agreement	Status		
	High	Low	Totals
High	61	21	82
Low	50	30	80
			162

Chi square = 2.13, NS

TABLE 40

LIKING STATUS OF PAIR MEMBERS AND DEGREE OF AGREEMENT IN SCHOOL-RELATED ATTITUDES AMONG 1-1 PAIRS, IN FALL

Agreement	Status		
	High	Low	Totals
High	62	28	90
Low	62	28	90
			180

TABLE 41

LIKING STATUS OF PAIR MEMBERS AND DEGREE OF AGREEMENT IN SCHOOL RELATED ATTITUDES AMONG 1-1 PAIRS, IN SPRING

Agreement	Status		
	High	Low	Totals
High	65	19	84
Low	44	26	70
			154

Chi square = 3.22, NS

Hypothesis 8: Among 1-1 pairs with low agreement in fall more high than low status Ss will show diminished liking for their fall first choice in spring.

Degree of Spring liking was defined in the same manner as for Hypothesis 2. The results obtained on this hypothesis for both sexes together are shown in Table 42.

TABLE 42

INDIVIDUALS' FALL STATUS AND DEGREE OF LIKING IN SPRING FOR FALL FIRST CHOICES AMONG 1-1 PAIRS WITH LOW AGREEMENT ON ATTRACTION RATINGS OF PEERS IN FALL

Status	Degree of Spring Liking for Fall First Choice			
	High	Medium	Low	Totals
High	24	11	24	59
Low	14	0	21	35
				94

Chi square = 8.17, $p < .025$

Hypothesis 8, applied to agreement between pair members in school-related attitudes yielded the results shown in Tables 43 and 44.

TABLE 43

LIKING STATUS AND DEGREE OF SPRING LIKING FOR FALL FIRST CHOICE AMONG 1-1 PAIRS WITH LOW AGREEMENT ON SCHOOL ATTITUDES IN FALL

Status	Degree of Spring Liking for Fall First Choice*			
	High	Medium	Low	Totals
High	24	9	29	62
Low	12	1	15	28
				90

* The numbers in this table represent individuals. NS

TABLE 44

LIKING STATUS AND DEGREE OF SPRING LIKING FOR FALL FIRST CHOICE AMONG 1-2, 1-3, AND 1-4 PAIRS WITH LOW AGREEMENT ON SCHOOL ATTITUDES IN FALL

Status	Degree of Spring Liking for Fall First Choice*			
	High	Medium	Low	Totals
High	11	10	21	42
Low	6	10	13	29
				71

*The numbers in this table represent pairs. NS

Before concluding the presentation of results, a few words about the frequency of reciprocated liking in our population are in order.

Given that ABX systems are probably best thought of as existing in states of relative, rather than absolute, balance or imbalance, the prediction that if A likes B, B will be found to like A seems to be central to the whole notion of balance in a system involving interpersonal relations. It is worth pointing out that among the children in our sample, when cross-sex likings are excluded, thirty-nine percent of the entire population were not even named as being among the four most-liked classmates of the child they liked most. This is true in both fall and spring. In fall one child in four was liked most by his or her most-liked classmate; in spring this ratio was one in five.

SUMMARY

When attraction to class members was used as the object of agreement, seven of the eight hypotheses were supported

in our sample or some subset thereof. Of the hypotheses which did receive support, all but Hypotheses 2 and 3 were supported for both sexes together. Hypothesis 4 received no support; Hypotheses 2 and 3 were supported only among boys (Hypothesis 3 mainly when boys were rating male classmates); and no hypothesis was supported when school attitudes were used as the object of agreement. In no case did a distribution tend strongly, much less overwhelmingly, in the predicted direction. And there were no striking differences in the degree to which different hypotheses were or were not confirmed. Most of the results tended slightly in the predicted direction. Moreover, the proportion of first liking choices which were reciprocated, whether with a first liking choice or with any liking at all, as measured in Questionnaire I, was relatively low in both fall and spring.

CHAPTER V

PERIPHERAL ISSUES AND RELATED DISTRIBUTIONS

This chapter will examine in greater depth that 39% of the children who were not among the first four liking choices of their most-liked classmates, the relation between grade level and intra-pair agreement, and a number of questions concerning liking status in this population.

CHILDREN NOT AMONG THEIR MOST-LIKED CLASSMATES' FOUR LIKING CHOICES

According to the data presented in Table 4 , 39% of all Ss in both fall and spring are not among the first four liking choices of the classmates they like best. And this percentage is for same sex choices only. Among those Ss who like a child of the other sex best, 85% are not among the four most-liked class members for that person. Since such a large proportion of children fall into this category it seemed worthwhile to ask a few further questions about this group. First, what degree of liking do these Ss receive on the 9 point attraction rating questionnaire from their most liked classmates? There were, on the average, about 60 such Ss per grade level, or 10 Ss per class, 190 in all, in spring. Of this number, 109 (57.4%) were rated on Questionnaire VI as liked by their first choices; 50 (26.3%) were rated on a point midway between

being liked and disliked; and 31 (16.3%) were disliked by their most-liked classmate. There were no sizable differences between grade levels or sexes. Fourth grade girls and sixth grade boys tended to receive slightly more neutral ratings than did the other sex/grade level groups.

For six classrooms, two at each grade level, the degree of reciprocation these Ss received from their second, third, and fourth most-liked classmates was also tallied. Partly this was done because it seemed quite possible that a large number of these Ss might have nominated a classroom star as their first choice, and given their closest playmate or actual friend a second or third choice. Again, there were no differences by sex and/or grade level. Table 45 presents the degree of liking received by spring 1-0 Ss from their 2nd, 3rd, and 4th choices in 6 classes.

TABLE 45

LIKING RECEIVED BY 1-0 Ss FROM SECOND, THIRD, AND FOURTH MOST-LIKED CLASSMATES

Degree of Liking for Three Next Most-Liked Classmates	Degree of Liking Received on Questionnaire I				
	0	1	2	3	4
2	32	1	4	2	5
3	37	0	2	1	5
4	33	0	4	2	4

Thus, these Ss did not fare too well with any of their most-liked classmates, being unchosen by 77% of all their second, third, and fourth most-liked classmates.

One final question about this group of Ss remained. To what degree did they in fact give their liking choices to classroom stars? To ascertain this, the correspondence between the first four choices of these Ss and the four same-sex Ss with the highest liking status in their respective classes was calculated in the same six classrooms. Again, there was no difference between the sexes. There were slight, noticeable differences across grades for both sexes, though no inferences can be made from a sample of only two classes per grade level. Fifth graders tended most to give their top four liking choices to their highest status classmates.

TABLE 46

FREQUENCIES WITH WHICH TOP FOUR LIKING CHOICES OF 1-0 Ss COINCIDE WITH FOUR HIGHEST STATUS Ss OF THE SAME-SEX

Four Liking Choices of Ss	Liking Status in the Classroom					
	Not among top four	1st	2nd	3rd	4th	Totals
1	31	6	7	3	1	48
2	26	5	9	6	3	49
3	22	6	5	9	8	50
4	32	1	3	4	7	47
Totals	111	18	23	22	19	194

TABLE 47

PERCENTS OF THE FIRST FOUR LIKING CHOICES OF 1-0 Ss COINCIDING WITH THE FOUR HIGHEST STATUS SAME-SEX CLASSMATES

Grade	Boys	Girls
4	39	44
5	52	48.4
6	30.5	37.5

TABLE 48

PERCENTS OF THE FOUR LIKING CHOICES OF ALL Ss RECEIVED BY THE FOUR HIGHEST STATUS BOYS AND GIRLS OF SIX CLASSROOMS

Grade	Top Four Boys	Top Four Girls
4	25	25
5	26	25
6	20	23

Sixth graders did so least of three grade levels. A chi square was calculated for the difference between the fifth and sixth grades in this regard. The results, which did not reach the .05 confidence level, are presented in Table 49.

TABLE 49
DISTRIBUTION OF LIKING CHOICE RECEPTIONS AMONG FOUR HIGHEST STATUS CLASS MEMBERS AND OTHER Ss IN 5TH and 6TH GRADES

Receivers of top four liking choices	Grades		
	Fifth	Sixth	Totals
Not Among the four most liked Ss	31	31	62
The four most liked Ss	31	16	47
			109

$X^2 = 2.16$, NS

In these six classes, 42.5% of the top four liking choices of Ss whose first liking choice did not reciprocate, were among the four highest status same-sex classmates. Compared with the percentages of all students' top four liking choices which coincide with the classroom stars in six classes (Table 48) this would seem to indicate that the low degree of reciprocated liking these Ss receive may be associated with a tendency to nominate classroom stars as their most-liked classmates. If this were to be pursued it would be instructive to see what percentages of all students' top four liking choices reciprocate with some degree of liking. Given the fact, which we shall be considering later in this chapter, that the distribution of liking in most classrooms is relatively more centralized in spring, we would expect most Ss to receive a relatively low amount of reciprocation from their four choices. And given such centrality and the small number of same-sex classmates per class, it is also likely that a fairly high percentage of most students' liking choices do fall to their four highest status classmates.

GRADE LEVEL AND AGREEMENT BETWEEN PAIR MEMBERS

One question of some interest was whether grade levels would differ in the degree to which their student pairs agreed in their attraction ratings of classmates. If we consider the increased identification with peers and the generally increasing amount of time children are thought to spend with peers as they approach their teens, and the likelihood that a child's own identity as well as his likes and dislikes

gradually become more definite with age, we might expect a positive relationship between grade level and degree of agreement within pairs. Chi-square values were calculated for this relationship in both fall and spring. Results are shown in Tables 50 and 51.

TABLE 50

GRADE LEVEL AND NUMBER OF 1-1 PAIRS HAVING HIGH AND LOW AGREEMENT ON ATTRACTION RATINGS OF CLASSMATES IN FALL

Degree of Agreement	Grades			
	4	5	6	Totals
High	9	19	21	49
Low	18	17	13	48
Totals	27	36	34	97

Chi square = 4.98, NS

TABLE 51

GRADE LEVEL AND NUMBER OF 1-1 PAIRS HAVING HIGH AND LOW AGREEMENT ON ATTRACTION RATINGS OF CLASSMATES IN SPRING

Degree of Agreement	Grades			
	4	5	6	Totals
High	11	19	11	41
Low	11	17	12	40
Totals	22	36	23	81

No Chi square was computed for Table 51.

STABILITY OF LIKING STATUS

One of the perennial foci of classroom research has been the stability of the liking status position of children over time. In the construction of Table 52, all Ss who were present in both fall and spring were rank-ordered separately by sex within their classes at each time. Tied Ss were given an average rank-order position. The signed differences between each child's fall and spring rank-order positions were then obtained. Because of the averaging procedure, some children's difference scores were fractions or mixed numbers, e.g., .5 or 3.5. In all such cases the difference score was rounded to the next highest whole number. Thus a student whose spring position differed by .5 from his fall position was counted as having changed by one status position. Thirty-two percent, or approximately one-third of all Ss are within one status position of their fall ranking on the liking status hierarchy in spring. And fifty percent are within two status positions of their fall ranking.

It should be mentioned that in one 6th grade class a student dropped from a fall liking score of five weighted points to a spring score of one point and yet increased his relative liking status because certain of his classmates lost more points than he did. In the same class another child increased from two points to three points whereas his relative liking status increased by six rank-order positions. It can be seen in Table 52 that among all children in the sample for whom there were relevant data, one third remained

TABLE 52
CUMULATIVE PERCENTAGES OF Ss ACCORDING TO DIFFERENCES IN THEIR STATUS POSITION IN FALL AND SPRING BY SEX AND GRADE LEVEL

	Cumulative Percent Boys			
Grade	4	5	6	All
Number of Ss	(88)	(94)	(82)	(264)
No. of Rank Order Positions Change Fall to Spring	%	%	%	%
0	10	6	8	8
±1	34	35	28	32
±2	42	54	55	50
±3	61	63	67	65
±4	72	74	73	73
±5	83	83	83	83
±6	88	89	89	89
± > 6	100	100	100	100
	Girls			
Grade	4	5	6	All
Number of Ss	(92)	(94)	(86)	(272)
No. of Rank Order Positions Changed Fall to Spring	%	%	%	%
0	7	6	9	8
±1	31	32	30	31
±2	48	48	53	49
±3	58	65	60	61
±4	73	77	71	73
±5	80	83	79	80
±6	85	92	87	88
± > 6	100	100	100	100

(Table continued on p. 76)

TABLE 52

(Continued)

	Cumulative Percent Boys and Girls			
Grade	4	5	6	All
Number of Ss	(180)	(188)	(168)	(536)
No. of Rank Order Positions Changed Fall to Spring	%	%	%	%
0	8	6	9	8
±1	32	27	29	32
±2	45	50	54	50
±3	60	63	62	63
±4	72	74	70	73
±5	81	83	81	82
±6	86	86	91	88
±>6	100	100	100	100

within one rank order position of their fall liking status throughout the year, half the students remained within two rank order positions of their fall ranking, approximately two-thirds remained within three rank order positions and three-fourths remained within four rank order positions of their fall ranking.

Changes in the weighted number of points received by Ss with high and low liking status in fall are recorded in Table 53. Summaries of these data are presented in Table 54.

The average absolute change in weighted liking scores

ranged from 4.39 for fifth grade girls to 1.15 for sixth grade girls.

The fact that data on liking choices was lacking for 13 more Ss in the spring than in the fall means that the average number of liking points available in classes in spring was less than the number of points available in fall. Moreover, the actual number of points available was even less than this would indicate, because more Ss gave uncodable answers to Question 1, Questionnaire I in spring. This being

TABLE 53
CHNAGES IN WEIGHTED RECEIVED LIKING SCORES FROM FALL TO SPRING BY SEX, FALL STATUS, AND GRADE LEVEL

Grade	4				5				6			
Sex	Boys		Girls		Boys		Girls		Boys		Girls	
Fall Status (High or Low)	H	L	H	L	H	L	H	L	H	L	H	L
No. of Points Difference												
+>7	1	5	5	4	6	8	2	2	4	2	6	5
+ 6 to 7	1	3	4	4	2	4	5	3	2	3	2	5
+ 4 to 5	5	6	2	6	3	5	5	4	1	6	2	1
+ 2 to 3	5	5	5	6	4	6	0	11	4	5	5	6
- 1 to + 1	4	11	5	13	5	11	7	14	8	10	9	9
-2 to 3	9	5	3	6	2	9	6	5	4	4	2	8
-4 to 5	9	2	10	1	5	4	4	4	7	5	5	4
-6 to 7	1	3	5	2	6	1	6	0	3	2	5	2
->7	11	0	8	0	13	1	9	2	10	0	8	0

the case, the average signed difference in weighted scores for the sample as a whole would be a small negative number rather than zero.

The relationship between fall status and spring status is shown in Table 55.

TABLE 54

DIRECTION OF CHANGE IN RECEIVED LIKING STATUS FOR FALL HIGH AND LOW STATUS Ss BY SEX AND GRADE

Grade	4				5				6			
Sex	Boys		Girls		Boys		Girls		Boys		Girls	
Fall Status (High or Low	H	L	H	L	H	L	H	L	H	L	H	L
Liking Status in Spring:												
Same or Higher	13	27	18	27	21	27	17	29	14	21	18	20
Lower Status	32	14	29	16	27	19	27	16	28	14	23	18

TABLE 55

LIKING STATUS IN FALL AND IN SPRING

Fall Status	Spring Status					
	Frequencies		Percents of Fall Ss		Percents of Spring Ss	
	High	Low	High	Low	High	Low
High	178	90	66	34	70	38
Low	96	148	34	66	30	62

Thus two-thirds of those with a given status, high or low, in fall are found in the same status category in spring. Table 56 shows the distribution of students in each status category at each time for boys and girls separately.

TABLE 56

LIKING STATUS IN FALL AND IN SPRING, SEPARATELY FOR BOYS AND GIRLS

Fall Status	Spring Status			
	Boys		Girls	
	High	Low	High	Low
High	78	49	100	41
Low	39	59	37	89

CENTRALITY-DIFFUSENESS OF THE LIKING STRUCTURE

Standard deviations for the distributions of weighted received liking scores were calculated for all classes by sex and time (fall and spring). If all Ss in a class were present and all listed their four most liked classmates, the average number of points per student was 10. The failure of any student in the class to provide the names of four classmates in answer to question 1, Questionnaire I reduced the average received liking score possible in that class. Since classes varied in the total number of weighted points available, the mean liking score varied across classes. And since mean scores were calculated separately for the sexes despite the fact that Ss could and occasionally did nominate members of the opposite sex, the girls in one class might have an average received liking score greater than 10, whereas the boys would have an average of less than 10. Mean scores ranged from just above 8 to just below 11.

The size of the standard deviation for any group can be taken as one index of centrality of the liking structure. A

small standard deviation indicates that most Ss received fairly nearly the same amount of liking. The distribution of liking would therefore be "diffuse," or distributed widely among the Ss. A large standard deviation indicates the existence of greater inequalities in the amount of liking received by the Ss in that group.

Girls showed a trend over time toward greater centrality in their distribution of liking choices in 11 of 19 classes. Among fifth grade girls, however, five out of seven classes reversed the dominant trend and became more egalitarian in their distribution of liking choices. The average of the standard deviations for the seven classes of fifth grade girls in spring was also smaller than the averages for fourth and sixth grade girls. In fact, 3 of the 4 classes in which both sexes became less rather than more centralized in their distribution of liking were fifth grades in three different schools. Boys became more central in 14 of 19 classes.

When classes were ranked separately for sexes and times by the size of their standard deviations the results shown in Table 60 were obtained.

The signed differences between the fall and spring standard deviations were obtained for boys and girls separately in every class. These 38 scores were then rank-ordered. Table 61 shows the distribution of high and low male and female groups with the most and least amount of increase (the latter including those groups which decreased in centrality). Using the same median split, groups were classified by grade level as well.

TABLE 57

LARGEST AND SMALLEST STANDARD DEVIATIONS FOR LIKING DISTRIBUTIONS BY SEX, GRADE, AND TIME

Grade	Standard Deviation	Boys		Girls	
		Fall	Spring	Fall	Spring
4	Largest	8.89	9.96	8.92	11.72
	Smallest	4.00	4.82	5.87	4.92
5	Largest	10.86	10.26	8.78	6.99
	Smallest	4.68	5.27	4.87	4.44
6	Largest	7.88	10.72	11.34	13.64
	Smallest	3.30	5.41	4.85	5.85

TABLE 58

NUMBER OF CLASSES WITH MORE AND LESS CENTRALITY IN THEIR SPRING LIKING DISTRIBUTIONS BY SEX AND GRADE

Number of Classes in which:	Grade			
	4	5	6	All Grades
both sexes incresed* (in centrality)	4	2	4	10
both sexes decreased*	0	3	1	4
boys increased girls decresed	1	2	1	4
boys decreased girls increased	1	0	0	1

*The smallest changes were +.11 and -.10; the largest changes amounted to +5.21 and -5.15.

TABLE 59
AVERAGE CHANGES IN STANDARD DEVIATIONS OF LIKING DISTRIBUTIONS BY GRADE AND SEX

Grade	Boys	Girls
4	+.91	+1.51
5	+.21	- .89
6	+1.97	+ .11

TABLE 60

NUMBER OF CLASSES OF BOYS AND OF GIRLS AT EACH TIME WITH HIGH AND LOW CENTRALITY BY GRADE LEVEL

	Fall							
	Boys				Girls			
Grade	4	5	6	Totals	4	5	6	Totals
Centrality								
High	4	4	1	9	4	3	2	9
Low	2	3	5	10	2	4	4	10
	Spring							
High	3	4	2	9	4	2	3	9
Low	3	3	4	10	2	5	3	10

TABLE 61

DIFFERENTIAL INCREASE IN CENTRALITY BY SEX AND GRADE LEVEL

	Sex	
	Boys	Girls
Larger Increases in Centrality	9	10
Smaller Increases (or decreases) in Centrality	10	9

	Grades		
	4	5	6
Larger Increases in Centrality	8	4	7
Smaller Increases (or decreases) in Centrality	4	10	5

TABLE 62

STABILITY OF CLASSES ON BEING HIGH OR LOW IN CENTRALITY FROM FALL TO SPRING, SEPARATELY FOR BOYS AND GIRLS

Centrality		Spring			
		Boys		Girls	
		High	Low	High	Low
Fall	High	5	6	5	4
	Low	4	6	4	6

TABLE 63

CLASS SIZE AND CENTRALITY OF LIKING DISTRIBUTION FOR BOYS AND GIRLS IN FALL AND SPRING

	Fall				Spring			
	Boys		Girls		Boys		Girls	
Class Size	Large	Small	Large	Small	Large	Small	Large	Small
Degree of Centrality								
High	5	5	6	4	4	6	4	6
Low	5	4	4	5	5	4	6	3

Finally, the relationship between the size of classroom groups and centrality of liking structures was examined. Results appear in Table 63.

Table 62 reveals no difference between sexes in the number of classes which remained high and low in centrality of liking distributions. Nor is there an association between grade level and change in centrality of the liking distribution, although fifth grades would probably differ significantly from either fourth or sixth grades (Table 61).

It is interesting that there appears to be no relationship between a classroom's relative centrality (in the distribution of liking) in fall and in spring. And with the possible exception of girls in spring, no relationship emerges between the size of the same-sex classroom group and degree of centrality in the distribution of liking.

CHAPTER 6

DISCUSSION AND SUMMARY

The degree of confirmation found in this study for the balance hypotheses tested, with classmates constituting the attitude-objects used, is decidedly less than I had expected on the basis of previous research findings.

I particularly expected stronger confirmation when only classmates of the same sex were used as attitude objects. It is probably simply the case that the entire group of same-sex classmates is less relevant to the AB relationship than I thought. And if this is so, then the ABX systems of the Ss studied would not be in a state of imbalance by reason of disagreement regarding these X objects.

We would expect a relatively strong confirmation of balance hypotheses when the attitude objects are other same-sex peers highly liked by pair members, and the confidence level obtained when these were used as attitude objects was a high one. However, the strength of the relationship was only slightly stronger than when all class members were used. In part, the higher confidence level may be an artifact of the way Hypothesis 1 was operationalized. The strong relationship between the size of the N and the likelihood of obtaining a high confidence level, regardless of the

strength of the relationship, for tests such as the chi square may be responsible for much of the difference in confidence levels obtained when only second, third, and fourth choices were the attitude objects. In any case, the phi coefficients differed by only .05.

The fact that none of the hypotheses was confirmed when school-related attitudes were used as the object of agreement may be taken as a confirmation of the "importance and common relevance" clause in most predictions to balance in ABX systems. I did not expect to obtain confirmation regarding this set of objects. However, if, as Newcomb found in the second year of his study of acquaintance, instruments were used touching on more general cognitive-affective sets with regard to something like school, greater evidence of balance might well be found even in an upper elementary age group.

It should be remarked, and the fact is pointed up in the more extended analysis of Hypothesis 2, that the hypotheses in this study were limited to predictions concerning a set of six variables: degree of actual liking of A for B, degree of actual liking of B for A, degree of actual agreement between A and B, similarity between A and B on sociometric or behavioral positions attributed to them by others (and which were presumed to reflect attitudes on the part of A and B), strength of liking at another time, and received liking status. Consequently, a number of other possible outcomes of the balancing process could occur even

when the predicted outcomes did not. One class of such outcomes falls in the realm of changed perceptions by A regarding B's liking of him or B's opinions. Hypothesis 2 (page 48 ff.) provides a good example of the occurrence of a balanced outcome not encompassed in our prediction for that hypothesis. We thought it unlikely that Ss with high average disagreement in their fall ratings of approximately 30 individual classmates would remain friends and come to a higher degree of agreement in spring. But in fact of the nine 1-1 pairs whose members still liked each other most in spring, eight pairs had increased their average agreement regarding those 30 class members, and the increase was a substantial one.

Moreover, it seems likely that the dynamics of balance could well interact with other social-psychological needs and dynamics in ways not ascertainable by such straight-forward means as were used in this study. For example, it could be that the trend toward centrality of liking structure partially represents a balancing function by which children also attempt to validate their membership in the group privately and/or publicly through acceptance of apparent norms regarding the likability and status of classroom members.

Regarding the manner in which variables were operationalized in this study, it has already been pointed out that the question from which AB pairs were derived allowed Ss to name someone who was merely liked best in this class without assuring us that this child was the closest companion or even most attractive peer, since Ss could, of course, have

close friends outside the classroom. Our instruments did contain a question about the number of children not in the class that each S liked better than anyone in the class. But my experience in the classrooms administering the questionnaires gave me serious reason to doubt that an acceptable proportion of Ss understood the instructions for this question and answered it appropriately. Hence no attempt was made to use the answers to that question in this study. However, in view of the consistency with which the balance hypotheses were only very weakly supported, and considering the importance of the criterion of strong AB attraction, I tallied the responses to the following question in six classrooms at the end of the school year:

> Question 3: Are there other young people about your age not in this class whom you like better than anyone in this class?
>
> Yes_____No_____(Please check right answer)
>
> If you answered "Yes," how many of these other young people would you say there are that you like better than anybody in this class?
>
> _____(Write in the number you would guess.

The distribution of responses appears in Table 64.

TABLE 64

REPORTED NUMBERS OF FRIENDS OUTSIDE CLASS LIKED BETTER THAN ANYONE IN CLASS, IN SPRING

Number of Outside Friends	0	1	3	4-10	10
Number of Students Responding	40	36	23	41	16

We would infer from this that 23% of the Ss feel that the young person they like best is a classmate, whereas 77%

or over 3/4 of the Ss, have a best briend who is not a classmate. Moreover, 32% or a third of the children have four or more friends outside the class whom they like better than anyone in class at the end of the school year. And according to the oral instructions, these friends were not to include siblings. The above distribution strengthens my conviction that the data source was invalid.

Like most research, this study must be viewed as one of a number of studies which will need to be made of balance among elementary school children. Within the limits of the data, however, two additional findings contribute to the impression that balance was not operating in this population to the degree we might expect. Newcomb writes: "Realism tends to increase with acquaintance and, combined with constant tendencies toward balance, the inevitable trend is toward mutuality of attraction" (1963, p. 385). First, the median discrepancy score for the 81 1-1 pairs rating their attraction for classmates in spring was exactly the same as for the 96 1-1 pairs in fall, 1.96. This fact relates to the results of Hypothesis 3 which was confirmed only for boys and principally for their ratings of other boys. In this hypothesis the prediction was made that there would be greater agreement among friends of long standing in spring than among more recently formed friendship pairs. This hypothesis was not confirmed for girls or for the sexes together. Secondly, as Table 4 shows, there is, for all Ss, no greater percentage of reciprocated first liking choices in spring than in fall, and there is less 1-1 mutuality in

four of six groups and in the total population. (However, if only fourth and fifth grades are considered, a greater proportion of Ss receive some degree of liking from their first choice in fall). And only the fifth grades increase in the proportion of 1-1 mutuality. The tendency of the fifth grades toward greater mutuality in spring is also reflected in Tables 57 and 58 which show a trend in fifth grades toward greater diffusion of liking among classmembers from fall to spring.

Regarding the results of the testing of hypotheses grounded in balance theory, it seems to me that in this population the dynamics of balance could be said to be weakly operative in collective ABX systems regarding classmates of both sexes, and slightly more active regarding classmates of the same sex as the AB pairs.

There are a number of reasons one could adduce for the weakness of balancing effects in this population. One is that even same-sex classmates, all together, are simply not very important and relevant to the foremost liking relations of children this age. At a more general level, it seems likely that children in this age range may have far fewer sets of objects with respect to which they have formed stable and conscious attitudes. A third possibility is that children this age are not inclined to attend to as many variables in their interpersonal relationships as adults do; it may be that balance operates for them at a level of "now" experiential reward in interaction as well as at "deeper" levels of psychological need, neither level being much available to

them in a conscious perceptible, intelligible, or verbalizable manner.

Moreover, it is possible that children this age do not actually spend much time in conversation about their attitudes toward people and things; and insofar as they do communicate opinions which can be recognized as something to be agreed or disagreed with, it may be that their attitudes are so labile, their valence toward the objects discussed so comparatively weak, or their attention to the relation between their own and another's attitudes so fleeting that balance is not needed. Children of this age, in their interactions, may be so much more action- and experience-oriented that balancing mechanisms are rarely needed vis a vis friends. It seems likely that children could be much more active in balancing their attitudes with their perceptions of parents' attitudes.

What about the findings reported in Chapters One and Two from studies done in children's summer camps? The sources we had access to regarding these studies were quite limited in their exposition of the methods used, but they gave an impression of somewhat stronger confirmation for balance theory than has been found in this study.

A comparison of the results of this study with those reported by Davitz in 1955 raises a major distinction regarding our results. This is that our study has been solely concerned with collective systems of balance. Davitz found support for balance in individual systems of orientation in that children who liked each other saw themselves as similar

whether they were or not. However, he did not find support for collective systems of balance, for there was no difference between a child's most and least liked peer in actual similarity to the child. It is quite possible that balance theory might have received much stronger support among the children I have studied, had individual systems of orientation been the focus of attention.

Shapiro did deal with collective systems in the camping environment and his findings supported the operation of balance tendencies in his population. It may be that it is more important to agree with someone a person lives closely with, in the same cabin at camp, for either children or adults, than it is to agree with even a close friend when each lives in his own home. (This also raises the issue of an AB relation not based on attraction but in which balance may be very important nonetheless, an issue which has not received much attention in the theories of balance). It is also possible that a number of camp-related matters may be more important and relevant to the AB relationship than the collectivity of same-sex peers in the classroom.

One major issue regarding this research is the psychological equivalence for different children of naming another as one's first, second, third, or fourth most-liked classmate or of giving a classmate a certain rating on the nine-point scale of Questionnaire VI. The openness of the former question to different responses on the part of the child has already been adverted to. And with reference to the nine-point scale, it was recognized that two Ss might actually

feel and act the same toward others, but have different sets for thinking or verbalizing about their liking for others. Thus, one might produce a modal response of 4 and the other a modal response of 2. No feasible way to control for such a possibility was available so that the only recourse was to be as precise as possible with the data available and explain thoroughly the manner in which variables were operationalized. But it is to be desired that future research on balance among children employ multiple indices for variables characterizing the AB relationship. Asking the children to name those they play with most and how often, which classmates they like very much but don't really know very well yet, what sorts of things they talk about with their best friend, and a number of other questions designed to reveal more completely the nature of each major variable--these are examples of questions which should be answered. Of course, if observation of actual interactions among children were included, even greater confidence in the validity of the variables as indexed could be justified.

. The sort of variable on which similarity between friends is examined in future research could profitably consist of dimensions of physical and social behavior relating to somewhat less patent objects of personal attitudes, objects which are somewhat more "subtle" in this respect, and which would be measured by observation or by indirect means rather than by direct questions. Examples include styles of humor, styles of influence, threshholds for various emotional responses,

preferred levels of various affective components of primary peer group activities, and the like. It would be very worthwhile to try to include in such a study some theoretical basis for making differential predictions about which dimensions of the interpersonal relationship would tend toward complementarity between friends rather than similarity.

Regarding liking status, cases like the one mentioned wherein a child actually received fewer liking nominations in spring and yet increased in relative liking status merely dramatize what should be normal practice in reporting as fully as possible the exact methods used to arrive at an index of status and its stability or change.

At a greater remove from the operational concreteness of a study such as this, the opinion might be defended that we humans have not only a need to be consistent but a need to be inconsistent as well. Some of the classical defense mechanisms serve this need, but there are any number of less drastic psychosocial dynamics which daily perform similar services for us all. And it may be that often it is the need to appear consistent in the eyes of others rather than a need to be consistent in our own eyes that is operative in our behavior. A considerable number of Erving Goffman's observations attest to this (Goffman, 1959).

And as psychodynamics vary with the era and the culture, it seems quite possible that as we evolve more completely toward what Sorokin has termed a Sensate culture, the strenth of both the need to be consistent and the need to appear consistent may decline. Or rather as we come to make more

refined distinctions en route to a more sophisticated level of psychosocial understanding, social norms may countenance a greater degree of admitted intra-personal and inter-personal heterogeneity. When the cumulative research findings on relationships among a particular set of social-psychological variables are spread out over a decade or longer in a society changing as rapidly as ours, as probably all of the most thoroughly researched issues in the field are and must be, we run a high risk of attempting to substantiate the same psycho-social relationships in very different psycho-social milieus.

In summary this study has attempted to apply balance theory to the liking relationships and school-related attitudes of upper elementary school children. Balance theory states that the attraction of a person, A, to another person, B, interacts with A's attitudes toward important objects relevant to his relationships with B in such a way as to constitute a dynamic attitudinal system. One can speak of A's individual system, which refers to A's perceptions of B's attitudes, or of the collective system which exists between A and B and which involves the actual attitudes of both persons. These systems can exist in relatively balanced or unbalanced states. When A likes B, the collective system is in a state of balance when A actually agrees with B regarding objects which satisfy the criteria of importance and mutual relevance. If A likes B but is in disagreement with B over such objects, the collective system is unbalanced. For this latter case, balance theory specifies a numer of

alternative ways in which the collective system can be restored to a state of balance.

A sizable number of research studies have been conducted with college-age and adult subjects using concepts derived in balance theory. But, despite the considerable research literature on social psychological aspect of classroom groups in the elementary school, no research appeared to have been done in the classroom utilizing balance theory. And only a few studies have been done applying balance thoery to children in any setting.

Consequently, this research effort was undertaken, applying balance theory to the liking relationships and, secondarily, to the school-related attitudes of approximately 560 children in nineteen fourth, fifth, and sixth grade classrooms.

Data were used from two sociometric and two attitudinal questionnaires administered to all children in both fall and spring.

Each child was paired with one other whom the child named as his or her most liked classmate. Pairs were identified for both fall and spring, and agreement between pair members was calculated both on a set of school-related attitudes and on the attraction ratings each child made for all class members.

Eight hypotheses were tested. These predicted:

1-- more agreement between children with high mutual liking than between children with no record of mutual liking,

2-- more stability in mutual liking for pair members with high agreement than for pairs members with low agreement,

3-- more agreement in spring for pairs with high mutual liking in fall than between pair members with lower mutual liking in fall,

4-- a positive relationship between degree of agreement between pair members and degree to which the child liked most reciprocates with liking for the other member of the pair,

5&6- more frequent proximity on rank orders of teacher-related utilization of intelligence and peer-perceived cooperativeness with the teacher between pair members with high mutual liking than between pair members with no record of mutual liking,

7-- more agreement between children with high liking status and their liking choices than between low status children and their liking choices,

8-- more frequent reduction of liking for most-liked classmates among high status children than among low status children, given initial low agreement with the most-liked classmates.

Six of these hypotheses were confirmed at a confidence level of .05 or better. No hypotheses were confirmed when attitudes toward classroom life were used as the object of agreement. Hypothesis 4 was not supported; Hypotheses 2 and 3 were supported only for boys. Despite the statistically significant results from the other hypotheses, the strength of the relationships obtained was not great enough to warrant belief that the dynamics of balance between upper elementary children and their most-liked classmates play a major part in the formation and maintenace of children's attitudes toward classmates and classroom life.

APPENDIX

QUESTIONNAIRE I

Student Name _____

Teacher Name _____

Grade _____

Date _____

SOCIOMETRIC QUESTIONS

QUESTION 1: Which four persons in this class do you like the most? Please write their names in the four blanks below.

	Pupil's name
Like most	_____
Like next most	_____
Like third from most	_____
Like fourth from most	_____

QUESTION 2: Which four persons do you not know very well? Write the names in the blanks.

	Pupil's name
Know the least	_____
Know next least	_____
Know third from least	_____
Know fourth from least	_____

QUESTION 3: Are there other young people about your age not in this class whom you like better than anyone in this class?

Yes___ No___ (Please check right answer)

If you answered "Yes", how many of these other young people would you say there are that you like better than anybody in this class?

_____ (write in the number you would guess)

QUESTION 4: Where would you place yourself in judging how much the others in class like you?

_____ In highest part (quarter) of the class

_____ In second highest part (quarter)

_____ In third part (quarter)

_____ In lowest part (quarter)

QUESTION 5: Who are the four pupils in this class who you think most often get other pupils in this class to do what they want them to do? Write the names of the four persons in the correct blanks below.

	Pupil's name
Most often	_____
Next most often	_____
Third most often	_____
Fourth most often	_____

QUESTION 6: Who are the four pupils in this class who you think least often get others ot do what they want them to do? Write the names in the correct blanks below.

	Pupil's name
Least often	_____
Next to least often	_____
Third from least often	_____
Fourth from least often	_____

QUESTION 7: Compared with the othersin this class, how often can you get others to do what you want them to do? Place yourself in one of the four parts of the class by checking one of the blanks below:

_____ I'm in the highest part (quarter) of the class

_____ I'm in the second highest part (quarter)

_____ I'm in the third part (quarter)

_____ I'm in the lowest part (quarter)

QUESTION 8: Who are the four persons in this class who you think are best at doing the kinds of work you do in this class?

	Pupil's name
Best	_____
Next best	_____
Third best	_____
Fourth best	_____

QUESTION 9: Who are the four pupils in this class who you think are poorest at doing the kinds of work you do in this class?

	Pupil's name
Poorest	_____
Next to poorest	_____
Third from poorest	_____
Fourth from poorest	_____

QUESTION 10: Compared with the others in this class, how good are you at doing the kinds of work this class does? Place yourself in one of the four parts of the class by checking one of the blanks below.

_____ In the highest part (quarter) of the class

_____ In the second highest part (quarter)

_____ In the third part (quarter)

_____ In the lowest part (quarter)

QUESTION 11: Which four persons in this class do you think are most active in cooperating with the teacher, with what the teacher wants and with what the teacher is trying to do?

	Pupil's name
Most cooperative	_____
Next most cooperative	_____
Third most cooperative	_____
Fourth most cooperative	_____

QUESTION 12: Which four persons in the class do you think are the most active in paying no attention or going against what the teacher is trying to do?

	Pupil's name
Most going against	_____
Next most going against	_____
Third from most going against	_____
Fourth from most going against	_____

QUESTION 13: Who are the four pupils in this class who are most helpful to other pupils in this class?

	Pupil's name
Most helpful	_____
Next most helpful	_____
Third most helpful	_____
Fourth most helpful	_____

QUESTIONNAIRE IV

Teacher's name _____ Student's name_____

THE CLASSROOM GROUP

Circle the number which tells how you think the students in this class behave or think they behave.

The students in this class		Almost always	Usually	Seldom	Almost never
(1)	Do the same work at the same time	1	2	3	4
(2)	Learn more when they take part in class-room work	1	2	3	4
(3)	Help one another with their schoolwork	1	2	3	4
(4)	Behave themselves even when the teacher leaves the room	1	2	3	4
(5)	Laugh when someone misbehaves	1	2	3	4
(6)	Like one another	1	2	3	4
(7)	Are pretty much the same	1	2	3	4
(8)	Enjoy doing schoolwork	1	2	3	4
(9)	Work well with one another	1	2	3	4
(10)	Follow the teacher's directions	1	2	3	4
(11)	Laugh when someone makes a mistake	1	2	3	4
(12)	Like the teacher	1	2	3	4

HOW DO YOU THINK ABOUT THESE THINGS?

Circle the number which tells how <u>you feel</u> about each of the seven statements below:

		I agree almost always	I agree more than disagree	I agree as often as I disagree	I disagree more than agree	I disagree almost always
1.	It is good to take part as much as possible in class-room work	1	2	3	4	5
2.	Asking the teacher for help is a good thing to do	1	2	3	4	5
3.	Getting along with your classmates is just as impor-tant as schoolwork	1	2	3	4	5
4.	Schoolwork is fun to do	1	2	3	4	5
5.	The teacher really understands how pupils feel	1	2	3	4	5
6.	If you work very hard on your schoolwork others in this class will not like it	1	2	3	4	5
7.	The teacher expects pupils to put too much time on school-work	1	2	3	4	5

Circle the number which tells how you think your <u>teacher</u> feels about each of the seven statements below:

		The teacher would agree almost always	The teacher would agree more than disagree	The teacher would agree as often as disagree	The teacher would disagree more than agree	The teacher would disagree almost always
1.	It is good to take part as much as possible in classroom work	1	2	3	4	5
2.	Asking the teacher for help is a good thing to do	1	2	3	4	5
3.	Getting along with your classmates is just as important as schoolwork	1	2	3	4	5
4.	Schoolwork is fun to do	1	2	3	4	5
5.	The teacher really understands how pupils feel	1	2	3	4	5
6.	If you work very hard on your schoolwork others in this class will not like it	1	2	3	4	5
7.	The teacher expects pupils to put too much time on schoolwork	1	2	3	4	5

QUESTIONNAIRE V

Teacher's name _____ Student's name _____

CLASSROOM LIFE

Here is a list of some things that describe life in the classroom. Circle the number of the statement that best tells how this class is for you.

A. Life in this class with your regular teacher

1. Has all good things
2. Has mostly good things
3. More good things than bad
4. Has about as many good things as bad
5. More bad things than good
6. Has mostly bad things

B. How hard are you working these days on learning what you are being taught at school?

1. Very hard
2. Quite hard
3. Not very hard
4. Not hard at all

C. The pupils in this class know most of the other pupils

1. Very well
2. Pretty well
3. Somewhat
4. Not very well
5. Not well at all

D. Other pupils in this class care about how hard I work (in school)

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

E. Working in groups is fun

1. Always
2. Most of the time
3. Sometimes
4. Never

F. When I work with others on schoolwork I work very hard and learn a lot

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

G. How good is your school work compared to the work of others your same age?

1. Much better than most
2. A little better than most
3. About the same as most
4. Not quite as good as most
5. Much worse than most

H. The pupils in this class help one another with their schoolwork

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

I. The pupils in this class act friendly toward each other

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

J. The pupils in this class do what the teacher wants them to do

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

K. If we help each other with our work in this class, the teacher

1. Likes it a lot
2. Likes it some
3. Likes it a little
4. Doesn't like it at all

L. The pupils in this class hang around together outside school

1. Always
2. Most of the time
3. Sometimes
4. Hardly ever
5. Never

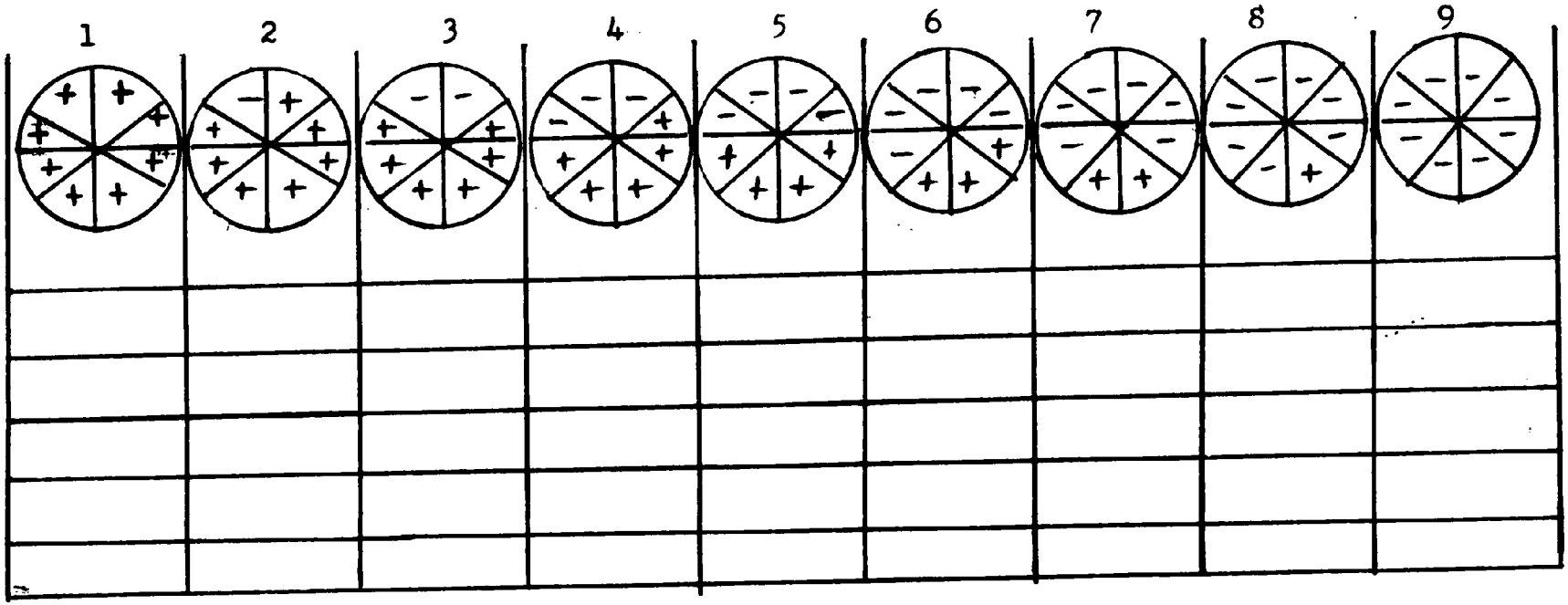
Teacher's name_____ Student's name _____

MY CLASSMATES*

Everyone has some things about him you like and some things about him you don't like so much. Some people seem to have more things about them you like and other people have more things about them you don't like.

Look at the circles below. Suppose that each circle stands for a different kind of person. Each person has different amounts of things you like and don't like The circles have different amounts of pluses and minuses. These circles stand for people.

For each person in this class, pick the circle which shows the combination of things you like and don't like. Then put a check ( ) for each person under the circle you chose. Check just one circle for each person. Do this for yourself too.



*(Additional pages similar to this were provided for children to list and rate every class member)

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